

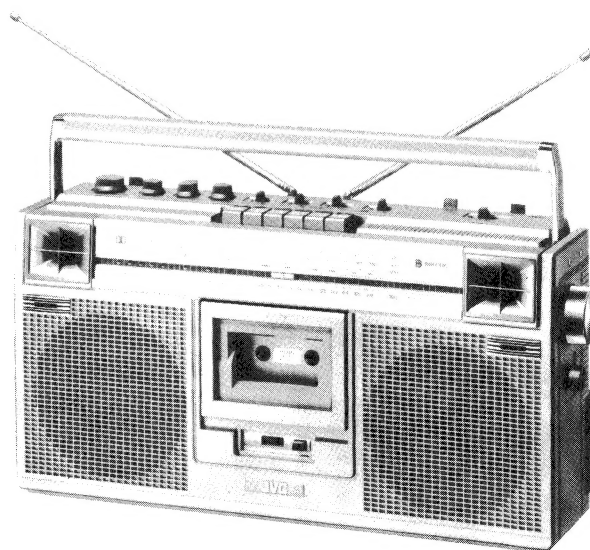
JVC

SERVICE MANUAL

MODEL

RC-656L/LB

LW-MW-SW-FM
4-BAND STEREO
RADIO CASSETTE
RECORDER



No. 1422
August 1980

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Specifications

Semiconductors	: 9 ICs (including 2 for the microphone and 1 for the motor) 33 transistors & 1 FET	Rewind time	: Within 110 sec. (C-60 cassette)
Speakers	: 16 cm (3.2 Ω) x 2, 5 cm (4 Ω) x 2	Fast forward time	: Within 110 sec. (C-60 cassette)
Tuner section		Amplifier section	
Frequency ranges	: FM 88 – 108 MHz SW 6 – 18 MHz MW 540 – 1600 kHz LW 150 – 350 kHz	Power output	: Max. 12 W (6 W + 6 W) at 3.2 Ω
Antennas	: Telescopic antenna for SW & FM Ferrite core antenna for MW & LW	Input jacks	: Mic x 2 (0.8 mV, low impedance)
Tape recorder section		Output jacks	: Ext. speaker x 2 (load impedance 4 – 8 Ω) Headphones x 1
Track system	: 4-Track 2-channel stereo	Input/output jack	: DIN jack
Frequency response	: 30 – 15,000 Hz (with chrome tape) 30 – 14,000 Hz (with normal tape)	Power supply	: DC 12 V (8 "R20 (U2)" batteries) Car battery (DC 12 V) AC 240/220/110 V, 50/60 Hz
Wow & flutter	: 0.12% (WRMS)	Power consumption	: 19 W
S/N ratio	: 50 dB, The S/N ratio is improved by 5 dB at 1 kHz and 10 dB at 5 kHz or above with DOLBY N.R. switch ON.	Dimensions	: 468(W) x 247(H) x 125 (D) mm
		Weight	: 5.2 kg (without batteries) 5.9 kg (with batteries)
		Design and specifications subject to change without notice.	

Features

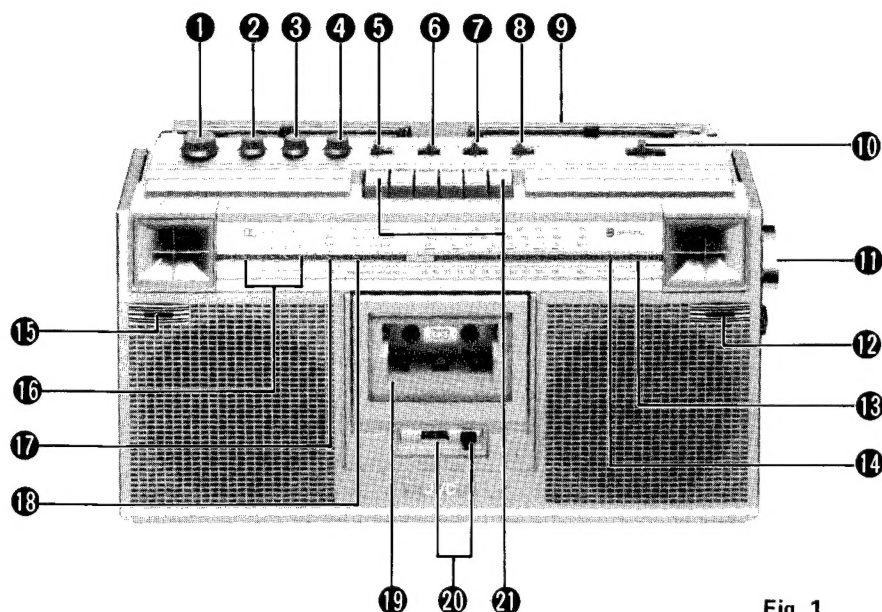
- Dolby * NR circuit incorporated for noise-free recording and playback.
- Biphonic * Processor for reproducing three-dimensional Biphonic sound field from binaural recordings and for giving wide stereo effect to ordinary stereo recordings.
- Five-LED Multi Peak Indicator for allowing accurate recording level control in order to make more elaborate "professional-touch" recordings.
- Manual/Automatic switchable recording level control system.
- 2-Way/4-speaker system consisting of two 16-cm (6-1/2") woofers and two 5-cm (2") tweeters.
- High-performance tuner realized by incorporation of a quadrature detector and a PLL IC multiplexer circuit.
- One-button recording ease — press only the record button to start recording.

- Auto-stop at the tape end in the record and play modes.
- Pause button to stop the tape temporarily in the record or play mode.
- Fine tuning for clearer short-wave reception.
- External speaker terminals provided.
- DIN jack provided.
- Three-way power supply flexibility; AC, 8 "R20" batteries or car battery.

* Noise Reduction system made under licence from Dolby Laboratories. "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories.

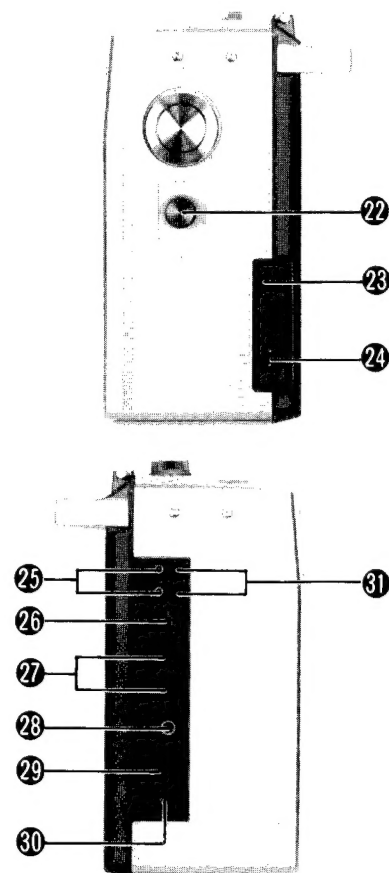
* BIPHONIC is a trademark of JVC.

Names of Parts



- | | |
|--|--|
| 1 VOLUME | 20 Tape counter with reset button |
| 2 BASS | 21 Tape operation buttons |
| 3 TREBLE | PAUSE button () |
| 4 REC VOLUME control | RECORD button (○) |
| 5 REC/DOLBY NR switch | PLAY button (◀) |
| 6 TAPE switch | CUE button (◀◀) |
| 7 MODE switch | REVIEW button (▶▶) |
| 8 FUNCTION switch | STOP/EJECT button (■) |
| 9 Telescopic antenna | FINE TUNING knob |
| 10 BAND switch | 22 Voltage selector |
| 11 Tuning knob | 23 AC jack |
| 12 Built-in microphone | 25 Microphone jacks (MIC) |
| 13 TUNING indicator | 26 DIN jack (REC/PB) |
| 14 FM STEREO indicator | 27 External speaker jacks (EXT SPKR 4 ~ 8Ω) |
| 15 Built-in microphone | 28 HEADPHONE jack |
| 16 Five-LED Multi peak indicator (LEVEL) | 29 BEAT CUT switch |
| 17 BATTERY indicator | 30 External DC input jack (DC12V) |
| 18 DOLBY NR indicator | 31 Dummy holes for connecting microphones with remote control plugs. |
| 19 Cassette door | |

Fig. 1



Removal of Main Parts

1. Rear Cabinet

- (1) Remove 7 screws (① ~ ⑧)
 ①, ② = SDSP3012
 ③ ~ ⑧ = VKZ4008-001
- (2) Remove 2 connectors (3 pin) connected to the rod antennas and power supply wires.

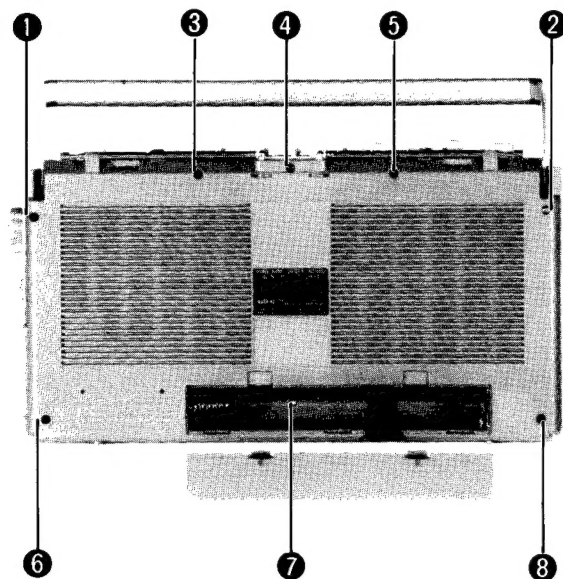


Fig. 2

2. Amplifier P.W. Board Ass'y

- (1) Remove the rear cabinet.
- (2) Remove 4 control knobs (VOLUME, BASS, TREBLE and REC VOLUME).
- (3) Remove 6 screws (⑨ ~ ⑭)
 ⑪ = SDSP3034V
 ⑨ ⑩ ⑫ ⑬ ⑭ = SDSP3005V
- (4) Remove the 3 pin connector connected to the E MIC wire terminal P.W.B.

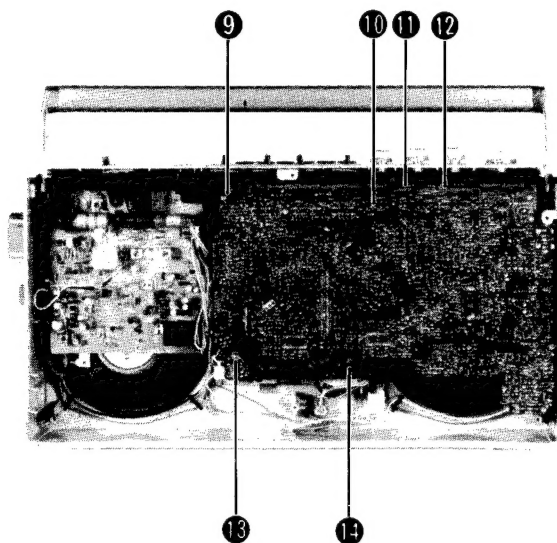


Fig. 3

3. Tuner P.W. Board Ass'y

- (1) Remove the rear cabinet.
- (2) Remove Tuning knob and Fine tuning knob.
- (3) Remove 5 screws (SBSF3010V)
- (4) Remove 2 connectors (3 pin and 5 pin).

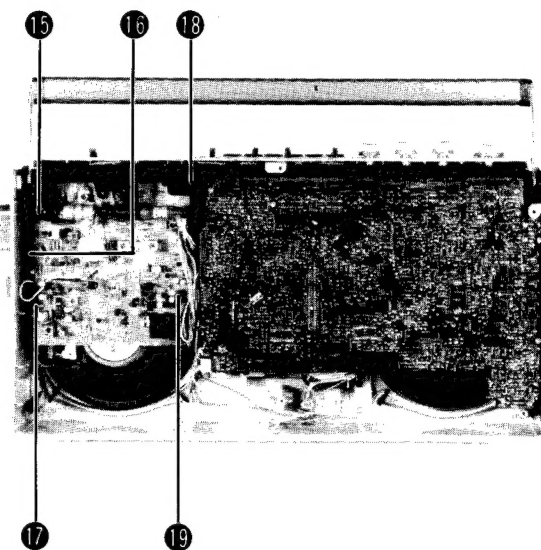


Fig. 4

4. Cassette Mechanism

Remove 4 screws (⑳ ~ ㉓) fastening the cassette mechanism.

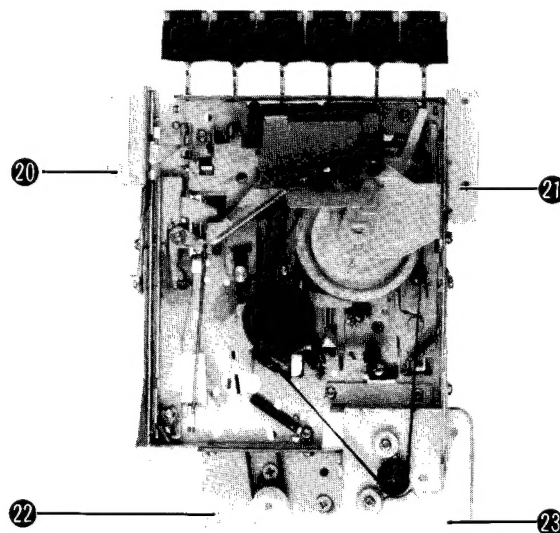


Fig. 5

Removal of Cassette Mecha Parts

1. **Pinch roller (❶)**
 - Remove the spring (❷).
 - Remove the E-ring (❸).
2. **REC/PB head (❹)**
 - Remove 2 screws (❺ , ❻).
 - Remove the solenoid head circuit board.
3. **Erase head (❼)**
 - Remove 2 screws (❽).
4. **Reel assembly (❾ , ❿)**
 - Insert the special tool for reel removing to reel 3 groove, and then pull out the reel.
5. **Take-up roller (⓫)**
 - Push the FF button.
 - Remove the washer.
 - If you broke the washer, you can use E-ring (REE 1200).
6. **RF clutch assembly (⓬)**
 - Remove the main belt (⓭).
 - Pull out the pulley (it is pressed).
7. **Main belt (⓭)**
 - To flywheel bracket (⓮) remove a screw (⓯).

8. **Flywheel assembly (⓯)**
 - Do the same manner as for the main belt.
 - (When assembling it, be careful not to forget the nylon washer for capstan.)
9. **Reef switch (⓰)**
 - Remove the screw (⓱).
10. **Motor assembly (⓱)**
 - Remove 3 screws (⓲).

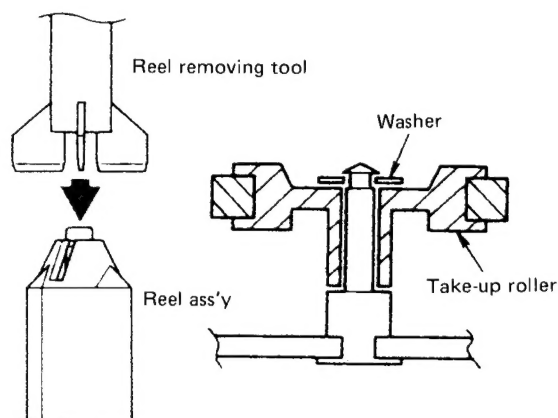


Fig. 6

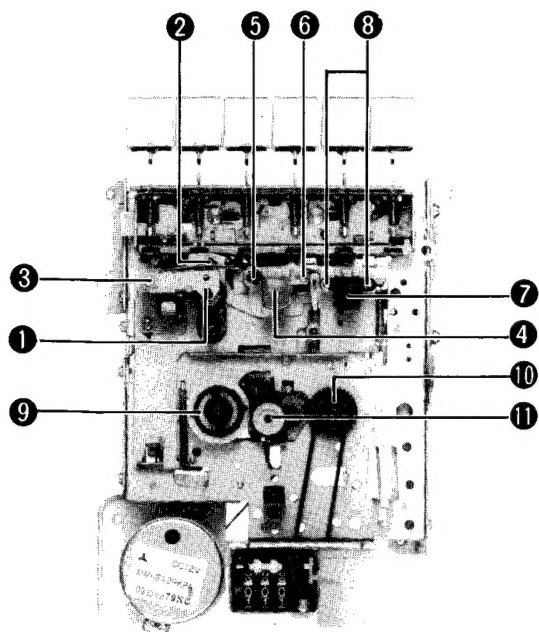


Fig. 7

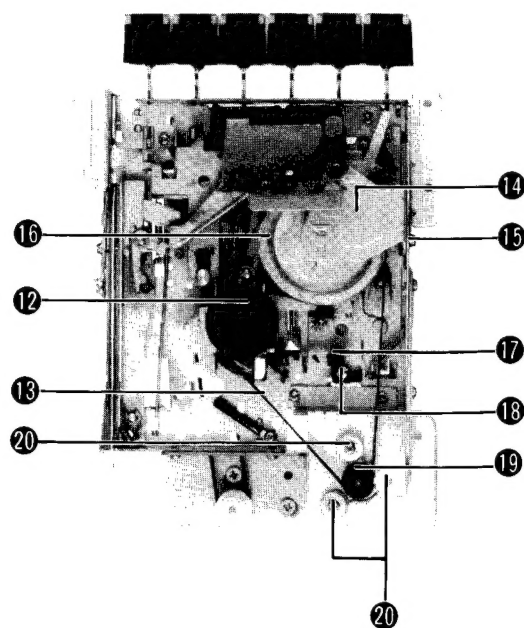


Fig. 8

Adjustment of Cassette Recorder

If the following adjustments are performed by ear or eye in a simple manner, be sure to perform them again later.

■ Head replacement and angle adjustment

1. Head replacement

- 1) To replace the record/playback head, remove two screws (A) and (B) shown in Fig. 9.
- 2) To replace the erase head, remove two screws (C) and (D) shown in Fig. 9.
- 3) When pressing the playback button, adjust these heads with the screws and the adjustment hole so that they are located as shown in Fig. 9.

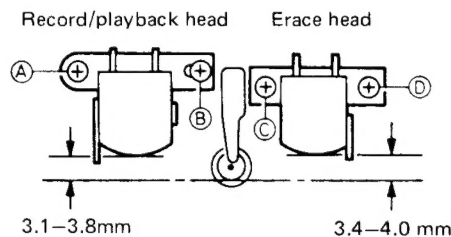


Fig. 9

2. Angle adjustment of Record/Playback head

- 1) Connect an oscilloscope to the speaker terminal. (A Lissajous waveform will appear.)
- 2) Play back the head angle adjusting tape (JVC test tape VTT-657).
- 3) Adjust the head angle by turning screw (B) shown in Fig. 9 so that the phase difference between the L and R outputs is 0° and the outputs are maximum.
- 4) After adjustment, be sure to paint-lock screw (B).
- 5) When adjusting the head angle using neither a voltmeter nor test tape, adjust it so that the output (esp. high band) from the speaker is maximum.

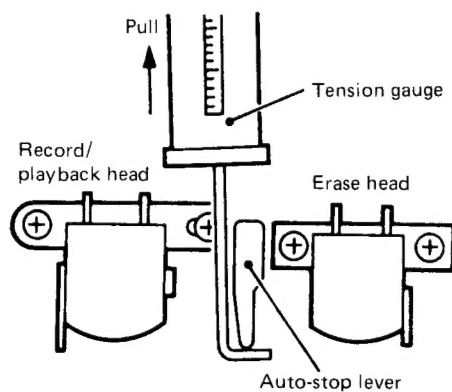


Fig. 10

■ Check of auto-stop detection pressure

- 1) Place the head mechanism with its motor side down, then set the recorder into the playback mode.
- 2) Hang a tension gauge on the detection cap tip as shown in Fig. 10, then confirm that when this gauge is slowly pulled, the auto-stop lever operates in the range of 50-70 g.

■ Flywheel thrust adjustment

Insert a clearance gauge into the clearance between the flywheel and the flywheel bracket, then adjust the thrust by turning the thrust screw shown in Fig. 11 to obtain a clearance of 0.1-0.3 mm wide.

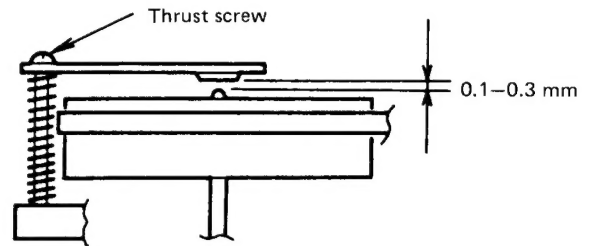


Fig. 11

■ Pause operation check

Operation and timing check

- 1) Confirm that when pressing the PAUSE button in the playback mode, the tape stops running, while when re-pressing, the recorder returns to the playback mode without any abnormality.
- 2) Confirm that when slowly pressing the PAUSE button, the pinch roller separates from the capstan to stop rotating earlier than the reel disk which in turn stops rotating. (Although they may stop almost at the same time, this means no abnormality.)

Note: For positive checking, it is advisable to use a cassette tape with a small number of turns such as C-30, etc.

■ Adjustment of pinch roller contact force

- 1) Position the mechanism shown in Fig. 12 with the motor side down, enter the recorder into the playback mode, and hang a tension gauge on the protrusion part of the pinch roller arm shown in Fig. 12. Next, confirm that when slowly pulling the tension gauge, the pinch roller stops rotating in the range of 450-550 g.
- 2) If the pinch roller does not stop in the range, replace the contact spring or adjust the contact force by bending this spring.

Note: Overly strong contact force may cause noise in the pinch roller bearing part, wow & flutter, or similar adverse effects. Conversely, too little contact force may cause auto-stop function failure, wow & flutter, or similar adverse effects.

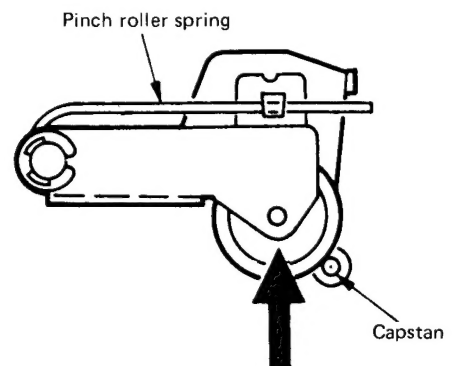


Fig. 12

■ Playback torque adjustment

- 1) Set a torque gauge to the take-up reel, then enter the recorder into the playback mode, and confirm that the playback torque is 45–70 g/cm.

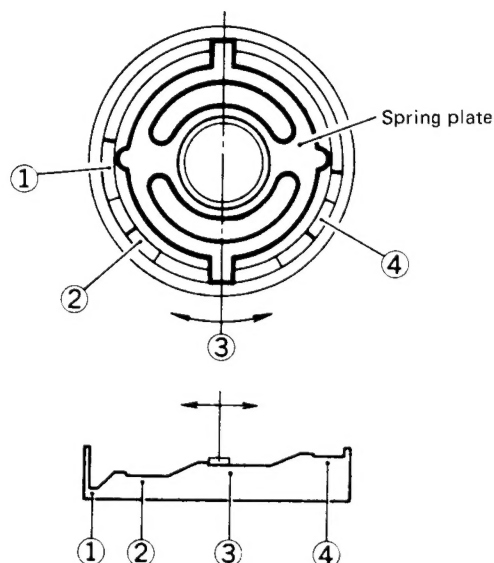


Fig. 13

- 2) When the playback torque is not in this range, check whether or not rubber and/or rotary members have dirt and/or oil on them. After that, if the torque is still low, lift up the spring plate shown in Fig. 13 to move it to position ③, while if the torque is high, move it to position ① in the same manner.

■ Fast forward/rewind torque adjustment

1. Fast forward torque adjustment (Fig. 14)

Set a torque gauge to the take-up reel, then enter the recorder into the playback mode, and confirm that the fast forward torque is 60–130 g/cm.

- 1) When a normal torque is not obtained because of the instability of the sliding mechanism within the R.F. clutch ass'y, lift up the spring plate inside the R.F. clutch ass'y and adjust the torque by moving it in the direction of ①.
- 2) When a normal torque is not obtained should the said sliding mechanism operate normally, adjust the torque by moving the said spring plate in the direction of ④ in the same manner as item 1).

2. Rewind torque adjustment (Fig. 14)

Set a torque gauge to the rewind reel, then enter the recorder into the rewind mode, and confirm that the rewind torque is 60–130 g/cm.

- 1) When a normal torque is not obtained because of the instability of the sliding mechanism within the R.F. clutch ass'y, lift up the spring plate inside the R.F. clutch ass'y and adjust the torque by moving it in the direction of ①.

- 2) When a normal torque is not obtained should the said sliding mechanism operate normally, adjust the torque by moving the said spring plate in the direction of ④ in the same manner as item 1) of this paragraph.

Note: When rubber members (belt, idler), the fringe of the flywheel, etc. have dirt on them, a normal torque may not appear, so clean them with alcohol, etc.

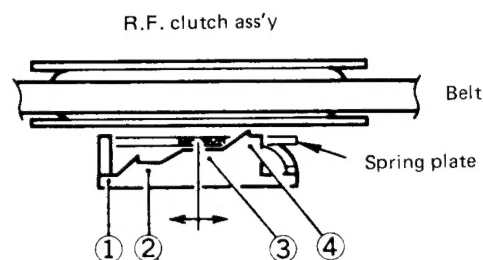


Fig. 14

How to Engage Dial Cord

1. Turn the dial drum fully counterclockwise (to the lowest frequency).
2. Use tetron cord (995mm long and 0.5mm in diameter)
3. Install the string in the sequence of the numbers.

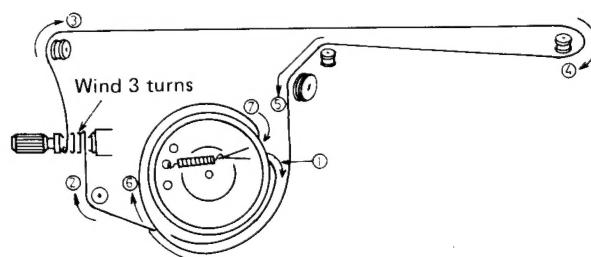


Fig. 15

Adjustment of Cassette Recorder Amplifier

Adjustment location

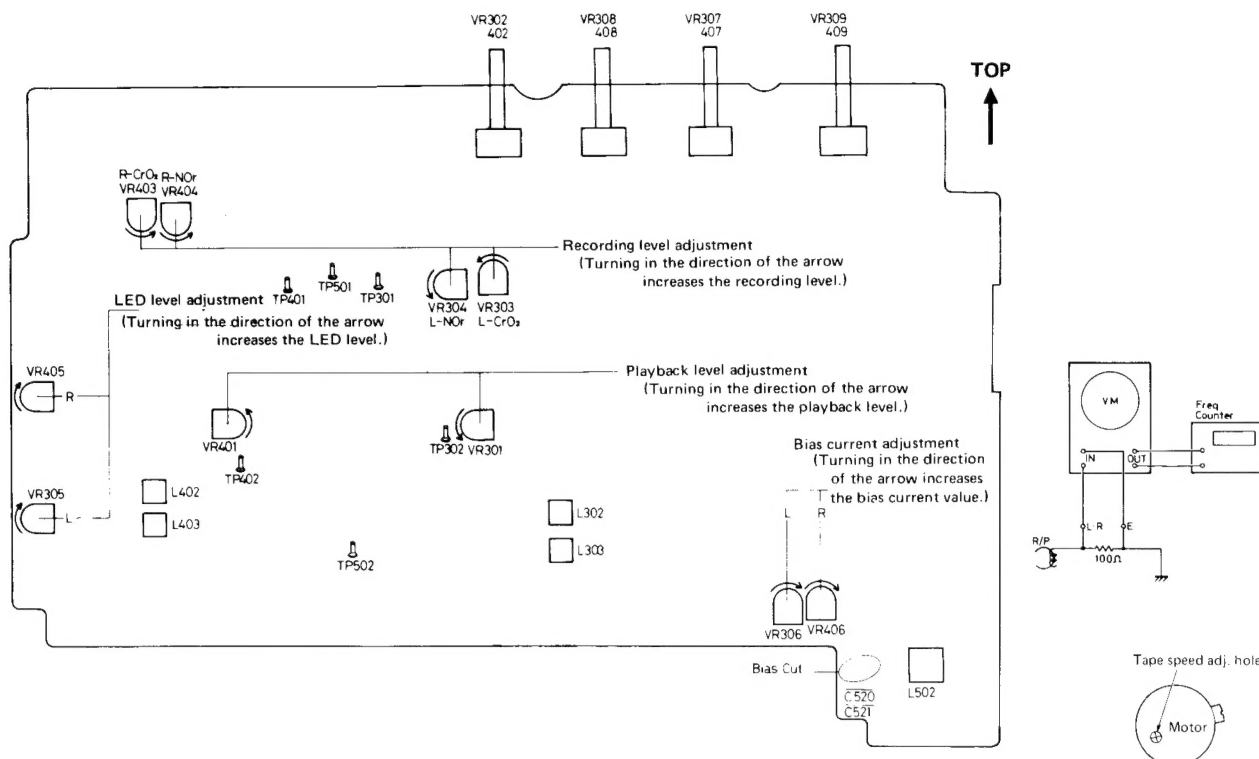


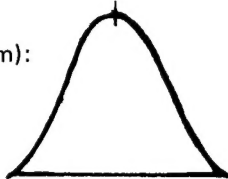
Fig. 16

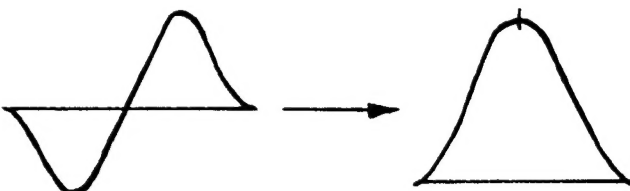
Step	Item	Input	Output	Adjusting point	Standard value	Tape select switch	Dolby NR switch	Rec-Play	Beat cut switch	Remarks
1	Head azimuth	Test tape VTT-653,658 (10kHz)	T302, T402 T502	Head	The phase difference between the L and R outputs is 0° and maximize the output level at the same time.	Normal	OFF	Play	—	Before playback level adjustment, L and R channel output levels become unbalance.
2	Playback level	Test tape VTT-664	same as above	VR301,401	410mV	Normal	OFF (ON)	Play	—	Check the playback level so that difference between ON and OFF with Dolby NR switch is less than ±1dB
3	LED indicators	Apply 1kHz -4dBs signal to the DIN socket. (L or R channel is applied independent signal.) Adjust VR305 so that TP302 output level become 410mV with R channel.		VR305,405	Check to light LED at 0dB level and to un-light the LED at -1dB level down.	Normal	ON (OFF)	Rec	—	Check Test Point 302, 402 levels become less than ±1dB at Dolby SW on.
4	Recording current	normal CrO2	same as above TP301, TP401 T501	VR304,404 VR303,403	35μA (0.35mV/10Ω) 70μA (0.7mV/10Ω)	Normal CrO2	OFF	Rec	—	Unsolder the bias cutting pattern.
5	Bias frequency	—	same as above	L502	63.5±0.1kHz	Normal	OFF	Rec	"1"	If the frequency is low, cut C409 and C408. Turn VR304,406 center.
6	Bias current	—	same as above	VR306,406	320μF (3.2mV/10Ω)	Normal	OFF	Rec	"1"	For this adjustment, Bias frequency not become standard value
7	Stereo signal trap	Apply 19kHz, 0dB signal to the DIN socket VR302=Max.	TP302, TP402 TP502	L303,403	min.	Normal	ON	Rec	—	After this adjustment, check the level so that 1kHz ~ 19kHz frequency become 30dB or more.
8	Bias trap	Apply 1kHz - less than -100 dBs signal to the DIN socket VR302=Max.	same as above	L302,402	Less than 0.5dB with the beat cut switch selection	CrO2	ON	Rec	"1~3"	
9	Rec/Play frequency response (Normal)	Apply -40dBs signal to the DIN socket	same as above	VR306,406	(At reference frequency; 1kHz 10kHz; 0±1dB)	Normal	OFF (ON)	Rec (Play)	"1" (Normal)	Check the Rec/PB frequency response become standard value at Dolby NR circuit ON.
10	Rec/Play level (Normal)	Apply -4dBs signal to the DIN socket. Adjust VR302 so that TP202 output level become 410mV.	same as above	VR304,404	The output difference level become less than ±1dB.	Normal	OFF	Rec (Play)	"1" (Normal)	
11	Rec/play level (CrO2)	same as above	same as above	VR303,403	same as above	CrO2	OFF	Rec (Play)	"1" (Normal)	

Tuner Alignment

BASIC CONDITIONS

POWER SOURCE OF THE RECEIVER	DC 12 V, AC240/220/110 V, 50/60 Hz.
LOAD RESISTANCE OF THE RECEIVER	50 mW (0.4 V)/3.2 Ω .
MODULATION OF SSG	400 Hz. 30%

Item	Description
1. MW IF ALIGNMENT 1-1 Conditions of the receiver. (1) Power source: (2) Function switch position: (3) Band select switch: (4) Volume control: (5) Tone control: (6) Variable capacitor: 1-2 Connection of Sweeper and the receiver (1) Tuner input: (2) Tuner output: 1-3 Aligning position: 1-4 Alignment (Waveform):  <p style="text-align: center;">Fig. 17</p>	DC 12 V. (When the power is supplied directly to the tuner in the receiver, the voltage should be adjusted to the proper level which shall be required by the tuner.) RADIO MW Minimum gain position Center (Bass, Treble) position Near the minimum capacity position where no signal come in. Positive side to TP-7. Positive side to TP-5. Negative side to TP-2. CFT1, IFT3 Adjust MW I.F.T. (above mentioned aligning position) so that maximum and symmetrical wave form can be obtained. In this case, the wavehead should be appeared at the center marker (455 kHz) on the scope of Sweeper.
2. FM IF ALIGNMENT 2-1 Conditions of the receiver (1) Power source: (2) Function switch position: (3) Band select switch: (4) Volume control: (5) Tone control: (6) Variable capacitor: 2-2 Connection of Sweeper and the receiver (1) Tuner input: (2) Tuner output: NOTE a) Attach a capacitor (30 pF) and a resistor (30 k Ω) in series to the positive side cable which shall be led from Sweeper input. b) Attach a capacitor (30 pF) and a resistor (100 k Ω) in series to the positive side cable which shall be led from Sweeper output. 2-3 Aligning position:	Same as mentioned in item 1-1 RADIO FM Minimum gain position Center (Bass, Treble) position Near the minimum capacity position where no signal come in. Positive side to TP-1. Positive side to TP-3. Negative side to TP-2. a) IF Waveform: IFT1 b) Discriminate Waveform: IFT2 ("S" curve waveform)

Item	Description
2-5 Alignment (Waveform): a) IF Waveform:	Adjust the discriminate coil (IFT2) so that "S" curve waveform may be changed to IF waveform as shown in following figure.  <p style="text-align: center;">Fig. 18</p> After above, adjust IFT1 so that max. sensitivity and symmetrical IF waveform can be obtained on the scope of Sweeper. Adjust the discriminate LFT2 again so that above symmetrical IF waveform may be changed to balanced "S" curve waveform.
b) Discriminate Waveform:	
3. MW RF ALIGNMENT 3-1 Conditions of the receiver. (1) Power source: (2) Function switch position: (3) Volume control: (4) Tone control: (5) Variable capacitor:	Same as mentioned in item 1-1 RADIO 50 mW Center (Bass, Treble) position Refer the following list shown in item 3-4.
3-2 Conditions of SSG. (1) Modulation: (2) Frequency: (3) Output level of the attenuator in SSG:	Refer the basic condition Refer the following list shown in item 3-4.. Approx. 50mW
3-3 Power output measuring position:	Speaker terminals

3-4 Alignment:

	Band Select Switch Position	Sort of Antenna to be attached to SSG	Frequency of SSC	Variable Capacitor Position	Aligning Position
1	LW	Loop Antenna	145 kHz	Max. capacity	L8
2			360 kHz	Min. capacity	TC3-1
3			Adjust the above aligning position (L8 & TC3-1) repeatedly so that the tuner can be received above frequency range (band width).		
4			160 kHz	to be received 160 kHz	L4
5			350 kHz	to be received 350 kHz	TC1-3
6			Adjust the above aligning position (L4 & TC1-3) repeatedly so that the tuner can be obtained the best sensitivity.		
7	MW	Loop Antenna	520 kHz	Max. capacity	L9
8			1,650 kHz	Min. capacity	TC3-2
9			Adjust the above aligning position (L9 & TC3-2) repeatedly so that the tuner can be received above frequency range (band width).		
10			620 kHz	to be received 620 kHz	L6
11			1,400 kHz	to be received 1,400 kHz	TC2-2
12			Adjust the above aligning position (L6 & TC2-2) repeatedly so that the tuner can be obtained the best sensitivity.		
13	SW	Dummy Antenna	5.8 MHz	Max. capacity	L10
14			18.6 MHz	Min. capacity	TC1-4
15			Adjust the above aligning position (L10 & TC1-4) repeatedly so that the tuner can be received above frequency range (band width).		
16			6.0 MHz	to be received 6 MHz	L7
17			18.0 MHz	to be received 18.0 MHz	TC2-1
18			Adjust the above aligning position (L7 & TC2-1) repeatedly so that the tuner can be obtained the best sensitivity.		

Item	Description
4. FM RF ALIGNMENT	
4-1 Conditions of the receiver	
(1) Power source:	Same as mentioned in item 1-1.
(2) Function switch position:	RADIO
(3) Band select switch:	FM
(4) Volume control:	50 mW
(5) Tone control:	Center (Bass, Treble) position
(6) Variable capacitor:	Refer the following list shown in item 4-3
4-2 Condition of FM SSG	
(1) Modulation:	Refer the basic condition
(2) Frequency:	Refer the following list shown in item 4-3.
(3) Output level of the attenuator in FM SSG:	The level shall be decided by the load resistance of the receiver mentioned in the basic conditions.

4-3 Alignment:

	Band Select Switch Position	Antenna to be attached to FM SSG	Frequency of FM SSG	Variable Capacitor Position	Aligning Position
1	FM	Dummy Antenna	87.5 MHz	Max. capacity	L5
2			109.0 MHz	Min. capacity	TC1-1
3			Adjust the above aligning position (L5 & TC1-1) repeatedly so that the tuner can be received above frequency range (band width).		
4			90 MHz	to be received 90 MHz	L1
5			106 MHz	to be received 106 MHz	TC1-1
6			Adjust the above aligning position (L1 & TC1-1) repeatedly so that the tuner can be obtained the best sensitivity.		
7	Pilot Signal Alignment	1. Input 60 dB MONO Signal Freq. 98 MHz 2. Adjust the VR1, so that output frequency of TP6 may be obtained 19 kHz.			
8	Stereo Separation Alignment	1. Input 60 dB STEREO Signal Freq. 98 MHz 1 kHz 100% 2. Adjust the VR2, so that leakage level of CN2P (L or R) may be obtained minimum level. (Separation; more than 25 dB)			
9	Stereo Tuning LED checking	When adjusting stereo separation, check the LED lit with function switch at stereo mode and check the LED unlit at mono mode.			

(A) Parts Location on Tuner P.C.B.

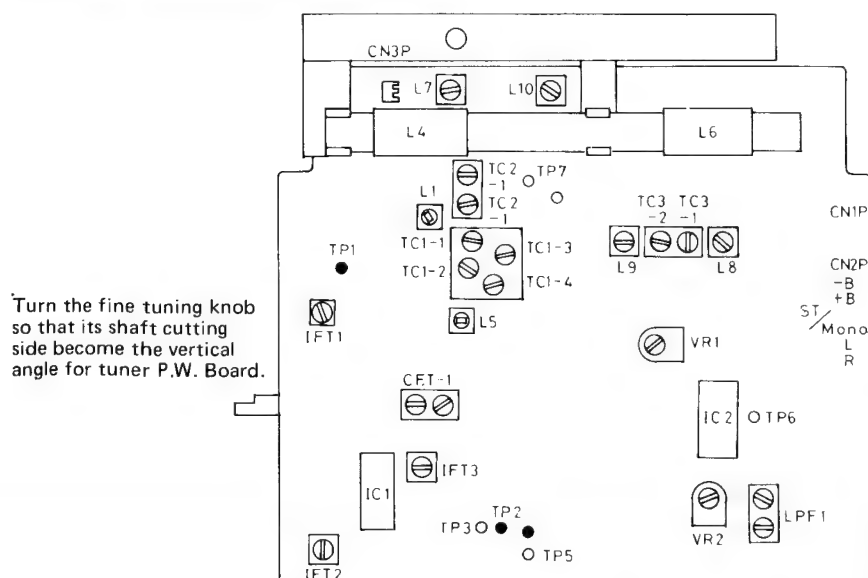
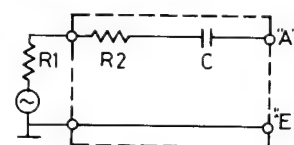


Fig. 19

(B) Dummy Antenna



$R1 + R2 = 80 \Omega$
 $C = 10 \text{ pF}$
 $R1$: Output impedance of S.S.G.

Fig. 20

Note:
 FM ant. CN3P is 300Ω balanced output. If when connecting 50Ω or 75Ω unbalanced SSG, need match its impedance.

Block Diagrams

Amplifier Circuit

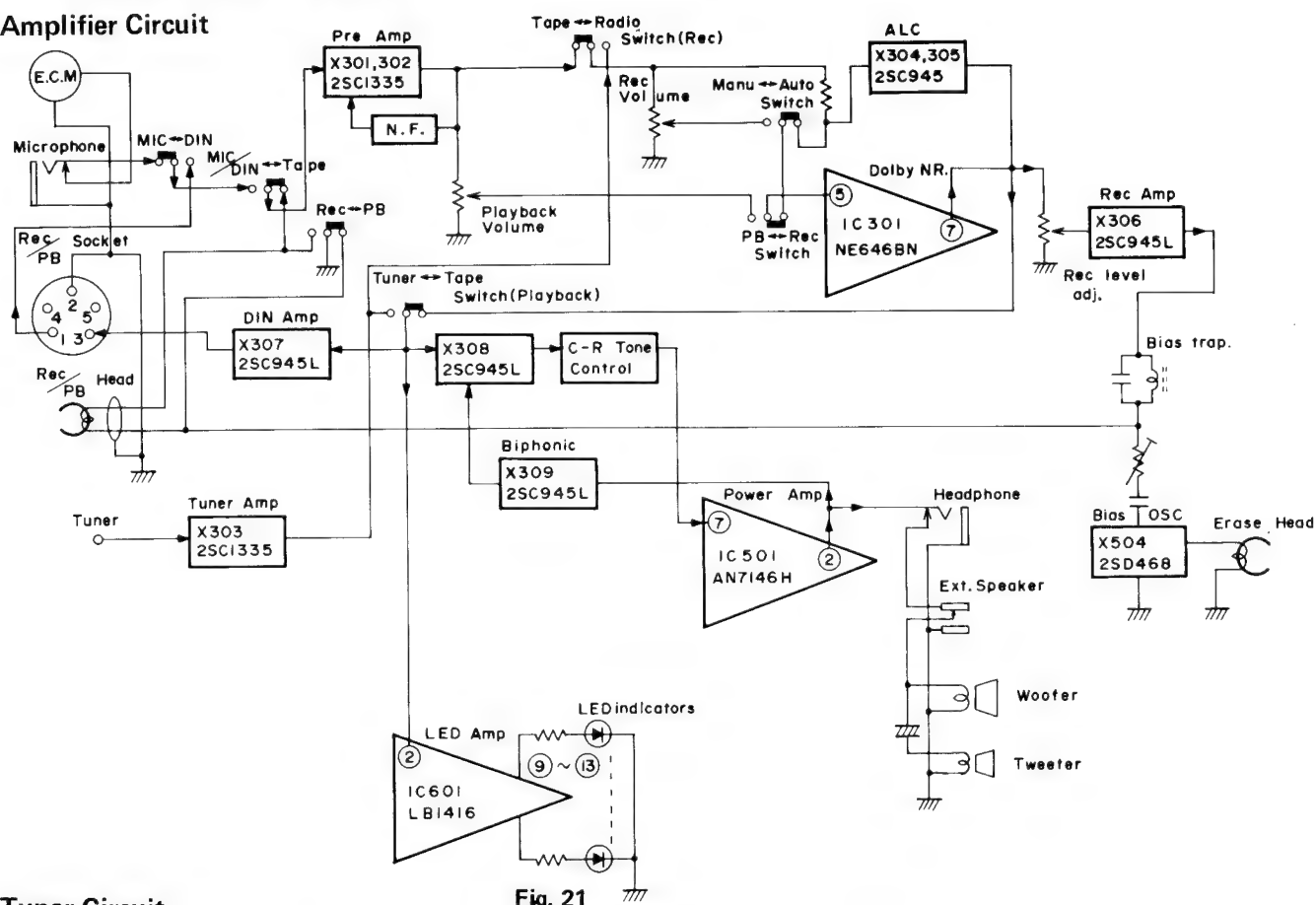


Fig. 21

Tuner Circuit

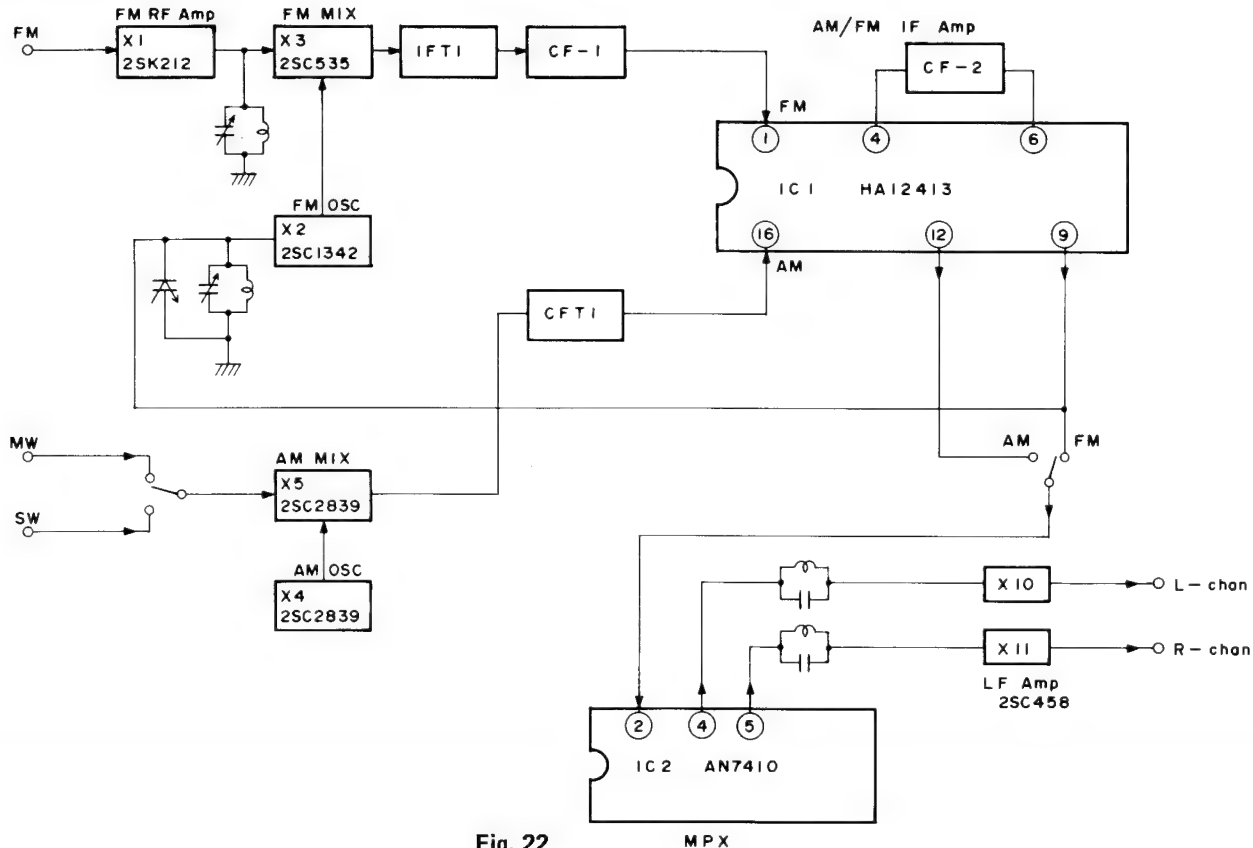


Fig. 22

Schematic Diagram of RC-656L/LB (Tuner Circuit)

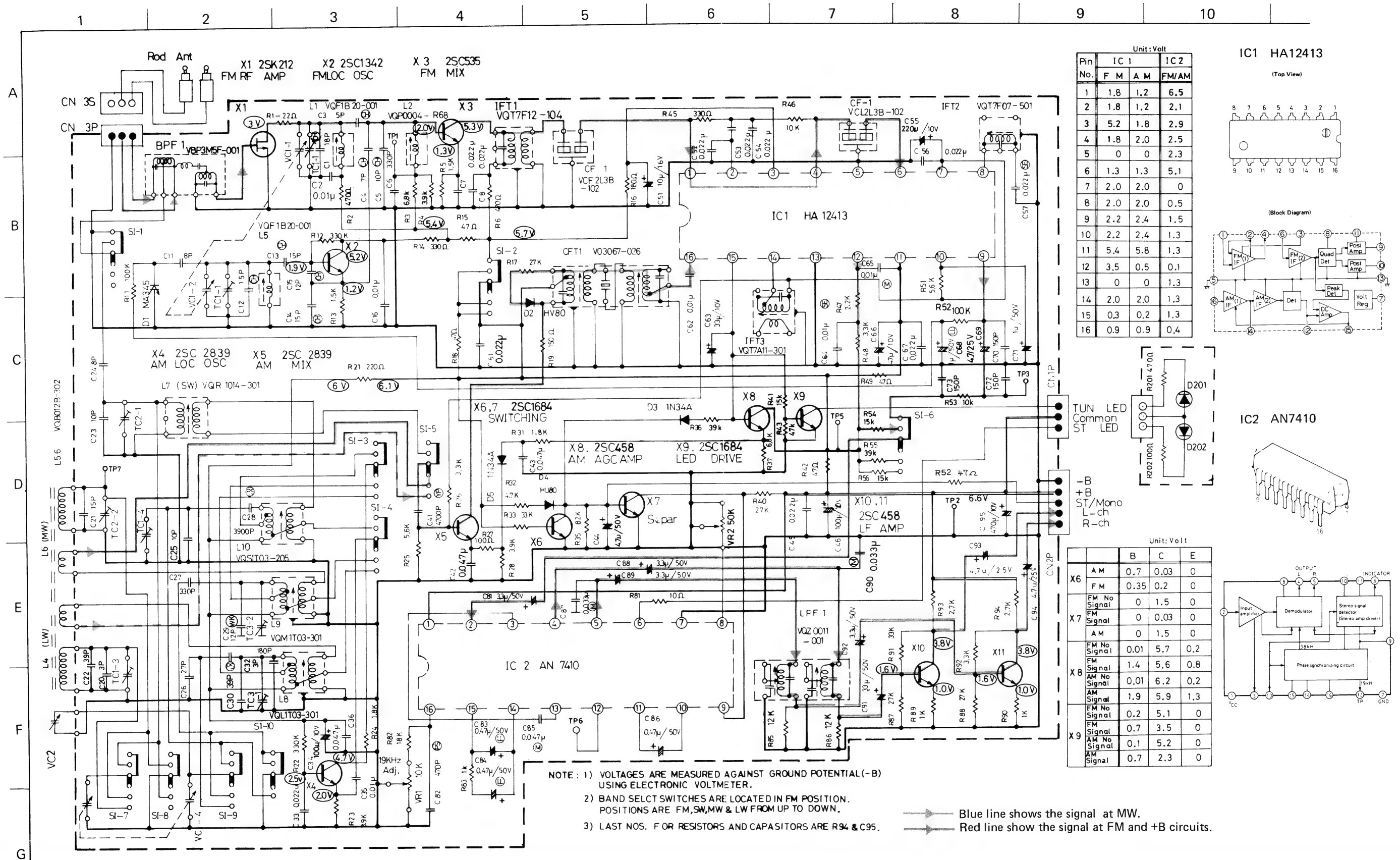
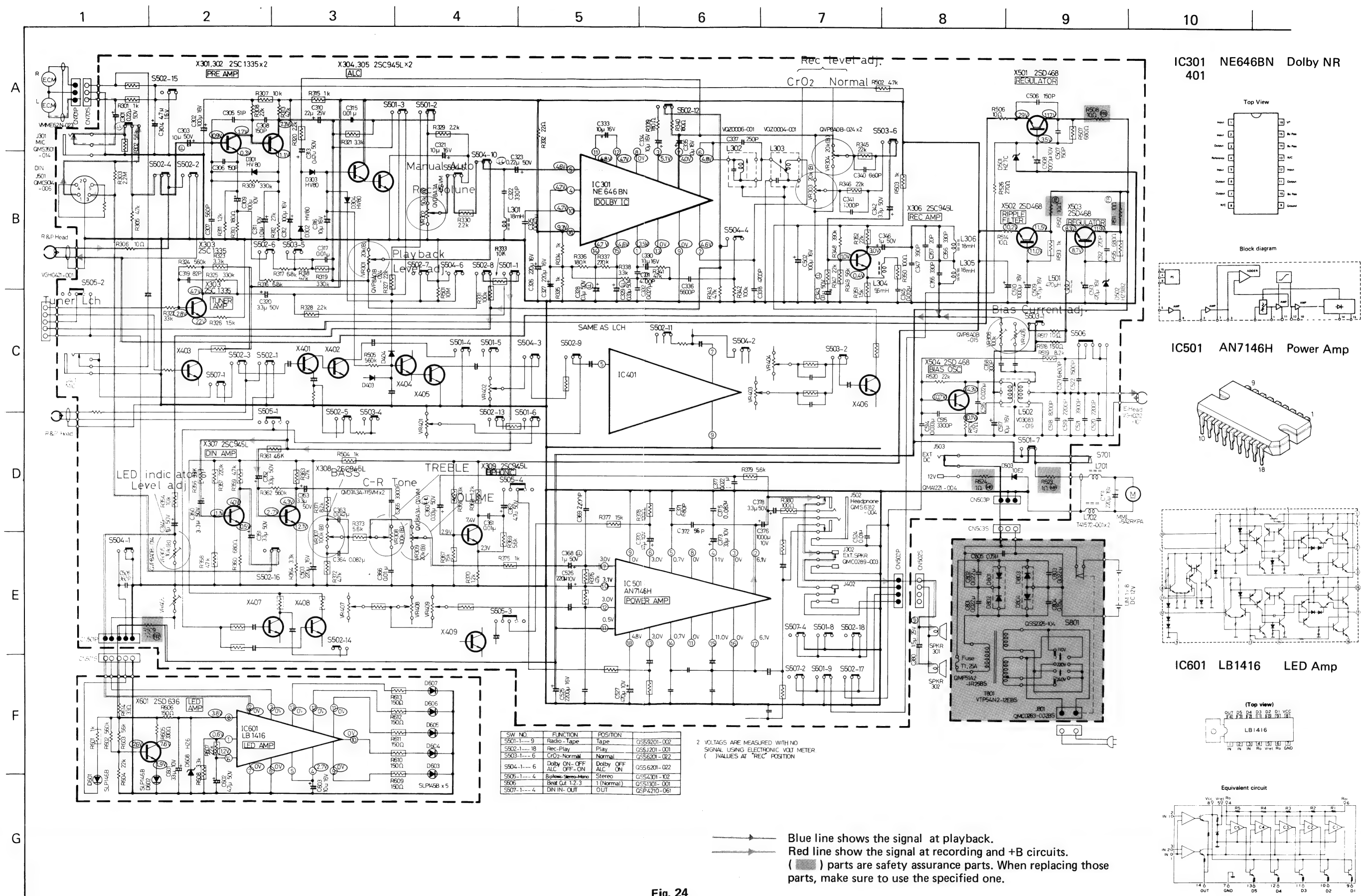


Fig. 23

Schematic Diagram of RC-656L/LB (Amplifier Circuit)



Wiring Connection

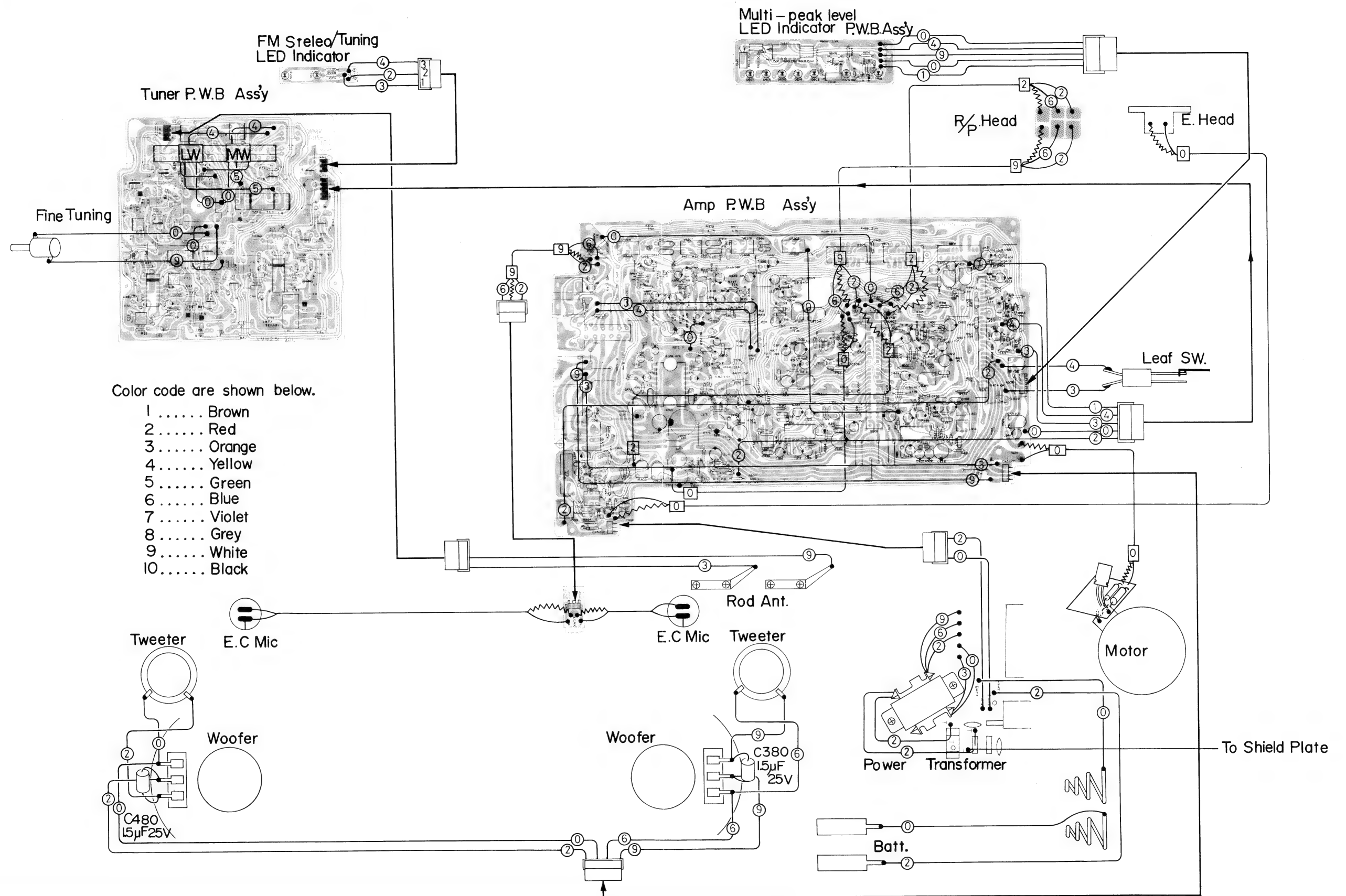


Fig. 25

Mechanical Component Parts

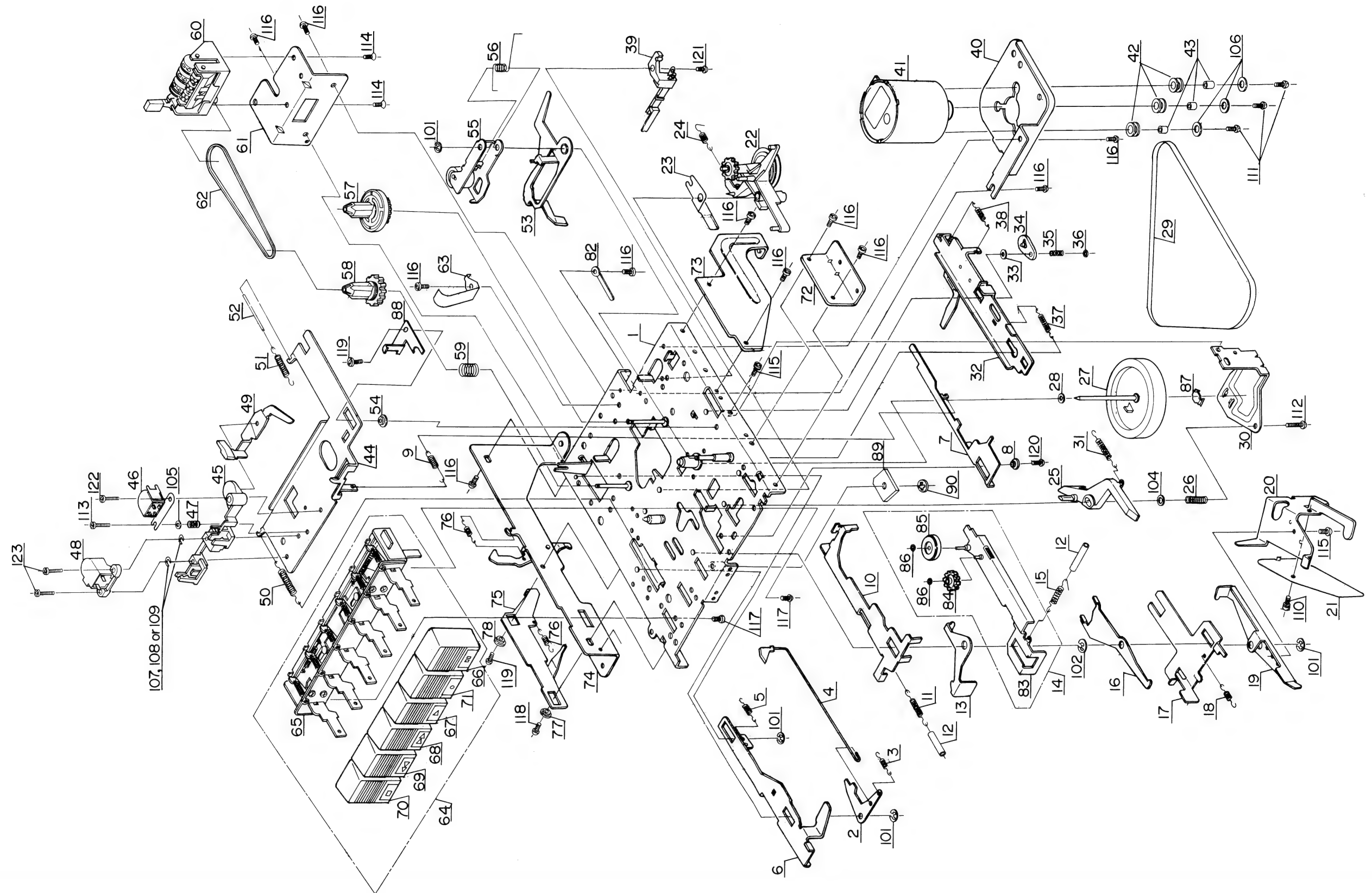


Fig. 26

Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	14310182ZT	Mecha Chassis Ass'y		1
2	13970201T	Rec. Safety Lever		1
3	2980802T	Spring		1
4	14310291ZT	Rec. Safety Spoke Ass'y		1
5	180502BT	Rec. Slide Lever Spring		1
6	14310201T	Rec. Slide Lever		1
7	13971002T	Play Slide Lever		1
8	090302T	Play Slide Lever Collar		1
9	13490301T	RC Spring		1
10	12001001T	Main Plate		1
11	7380702T	Main Plate Spring		1
12		Tube	φ3.5 x 18	2
13	14311004T	Rewind Arm		1
14	12000891ZT	FF. Idler Arm Ass'y		1
15	6300403T	FF. Idler Arm Spring		1
16	13371901T	RC Lever		1
17	14311901T	RC Slide Lever		1
18	580702T	Spring	for RC Side	1
19	13970205T	Record Lever		1
20	14310203T	Record Bracket		1
21	14310202T	Record Spring Plate		1
22	14310792ZT	R. F. Clutch Ass'y		1
23	14631010T	Rew. Spring Plate		1
24	12000709T	R. F. Clutch Arm Spring		1
25	12001102T	Auto Stop Lever		1
26	14310901T	Thrust Spring		1
27	12000903ZT	Flywheel Ass'y		1
28	4081120T	Nylon Washer		1
29	12000904T	Main Belt		1
30	12000901	Flywheel Bracket		1
31	15790901T	Auto Stop Lever Spring		1
32	14071781ZT	Pause Slide Lever Ass'y		1
33	15101201T	Collar	or REE2500 (E Ring)	1
34	12221702T	Pause Lever		1
35	13231701T	Pause Lever Spring		1
36	12601501T	Special Washer	Nylon φ1.7 x φ5 x t0.4	1
37	180502BT	Spring	for Pause Slide Lever	1
38	180311T	"	for Pause Arm	1
39	MSW-0087NKT	Leaf Switch		1
40	13971201T	Motor Bracket		1
41	14311296ZT	Motor Ass'y		1
42	F4641-001	Rubber Cushion		3
43	14311202T	Collar		3
44	12600301T	Head Panel		1
45	12000302T	Head Block		1
46	VGH0421-001	R/P Head		1
47	15600305T	R/P Head Spring		1
48	VGH0212-101	E. Head		1
49	12001193ZT	Detect Plate Ass'y		1
50	14000303T	Head Panel Spring (L)		1
51	12000303T	" (R)		1
52		Tube	φ1.4 x φ0.8 x L24	1
53	14311701T	Pause Arm Lever		1
54	4080411T	Head Panel Collar		1
55	12600491ZT	Pinch Roller Ass'y		1
56	12600402T	Pinch Roller Spring		1
57	12000591ZT	Take-up Reel Ass'y		1
58	13970691ZT	Supply Reel Ass'y		1
59	12910601T	Spring	for Back Tension	1
60	VKC5127-002S	Tape Counter		1

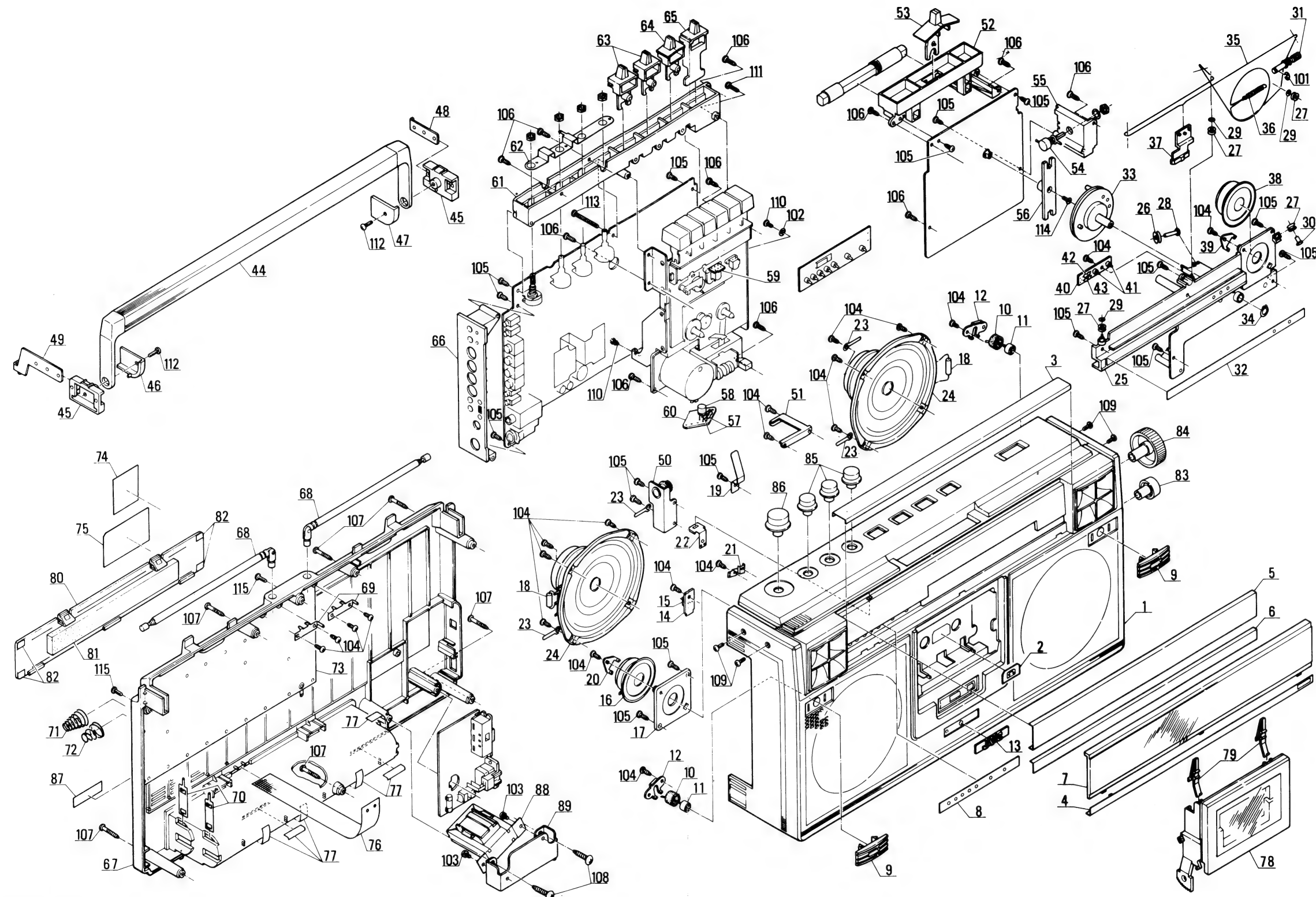
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
61	14311801T	Counter Bracket		1
62	3091001T	Counter Belt		1
63	6010101T	Pack Spring		1
64	14311494	Push Button Switch Composite Ass'y		1
65	13971492ZT	Push Button Switch Ass'y		1
66	VXP3054-001	Push Button		1
67	" -002	"	PAUSE PLAY	1
68	" -003	"	FF	1
69	" -004	"	REW	1
70	" -005	"	STOP/EJECT	1
71	" -006	"	REC	1
72	14311001T	Slide Bracket (A)		1
73	14311002T	" (B)		1
74	14311382ZT	Eject Bracket Ass'y		1
75	13971302T	Eject Lever		1
76	581205T	Spring		2
77	4080411T	Collar		1
78	9071904T	"		1
82	4660901T	Cord Clamp		1
83	12000891ZT	FF Idler Arm Sub Ass'y		1
84	12000802T	Idler Gear		1
85	12000804T	Take-up Roller		1
86	12001503T	Washer		2
87	12000906T	Spacer		1
88	13971005T	Guide Plate		1
89	15790103T	Rubber Sheet		1
90	RDS3000F	CS Ring		1
101	REE2500	E Ring		4
102	REE4000	"		1
104	WNS3000Z	Washer		1
105	WSS2000Z	"		1
106	14311203T	"		3
107	13270412AT	U Washer	} refer to Note	2
108	13270412BT	"		2
109	13270412CT	"		2
110	LPSP2605Z	Ass'y Screw		3
111	SPSP2609Z	Screw		3
112	SPSP2618Z	"		1
113	SPSX2011R	PM Screw		1
114	SSSP3005ZS	Screw		2
115	10PZ2605T	Tams Screw		2
116	20PZ26040T	Tap Screw	for Counter Bracket x 2 Pack Spring x 1 Side Bracket (A) x 2 Side Bracket (B) x 2 Eject Bracket x 1 Motor Bracket x 2	11
117	20PZ26050T	"		2
118	20PZ26060T	"		1
119	20PZ26070T	"		2
120	20PZ26080T	"		1
121	23PZ26050T	"	for Leaf Switch x 1	1
122	72PZ20110T	Cap Screw		1
123	72PZ20120T	"		2

Note:

The U-washers are provided for adjusting the height of erase head. They may not be used, if the head height is normal value. Choose one of three types (thickness) of U-washers according to the size of erase head when replacing it.

Parts No.	Thickness	Material
13270412AT	0.1 mm	Phosphor-bronze
13270412BT	0.2 mm	Brass
13270412CT	0.3 mm	Aluminium

Assembly Parts



Assembly Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1~9,13,21,22	ZCRC656L-CBF	Front Cabinet Ass'y		1 set
1	VJC1120-001	Front Cabinet		1
2	VJD4005-002	Reflection Plate		1
3	VJD4412-001	Button Plate		1
4	VJD4413-001	Fitting		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
5	VJK3159-001	Dial Scale (A)		1
6	VJK3160-001	Dial Scale (B)		1
7	VJK3161-001	Dial Lens		1
8	VJK4123-001	Scale Plate (A)		1
9	VJD4414-001	Mic Escutcheon		2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
10	VYH4102-001	Mic Bushing		2
11	VMME62N-D23	E. C. Mic		2
12	VYH4298-001	Holder		2
13	QXM2251-003	Mark		1
14	VMW1017-001D	P. W. Board	for Mic	1
15	QMV5005-003	Connector	CN701-1 ~ 3	1
16	EAS5PH08SA	Speaker	SPK302	1
17	VYH4565-001	Tweeter Holder		1
18	QEN21EM-155	N. E. Capacitor	C380, 480	2
19	VKY4165-001	Door Spring		1
20	VYH4352-002	Clamp	for Tweeter	1
21	V44981-001	Earth Catcher		1
22	VYH4389-001	"		1
23	VKZ4001-007	Wire Holder		6
24	EAS16P127SG	Speaker	SPK301 SPK401	2
25	VYH2122-001	Chassis Base		1
26	VYH4032-001	Roller		1
27	VYH4002-001	"		4
28	RTA4020	Rivet		1
29	V42562-1	Special Washer		3
30	RTA4010	Rivet		1
31	V41336-021	Tuning Shaft		1
32	VJK4124-001	Scale Plate (B)		1
33	VYH3177-001	Dial Drum		1
34	RCSA6000	C. Ring		1
35	VHR2TT9-05A	Dial Rope	995 m/m	1 set
36	50153-3	Spring		1
37	VJN4049-00A	Needle Ass'y		1
38	EAS5PH08SA	Speaker	SPKR402	1
39	VYH4352-002	Clamp	for Tweeter	1
40	VMW1017-001C	P. W. Board	for Tuner LED	1
41	SLP146B	LED	D201, 202	2
42	QRD147J-471S	C. Resistor	R201	1
43	QRD147J-101S	"	R202	1
44	VJH3005-00N	Handle Ass'y		1
45	VYH3120-001	Handle Supporter		2
46	V44943-001	Washer (L)		1
47	V44944-001	" (R)		1
48	VYH4224-001	Bracket		1
49	VYH4566-001	Bracket		1
50	VYH4571-00A	Dump Ass'y		1
51	VYH4578-001	Connect Bracket	for Front Cabinet ~ Rear Cabinet	1
52	VYH2124-001	Tuner Chassis		1
53	VXQ3018-004	Toggle Lever	for Band	1
54	QAT5001-203	M. V. Capacitor	VC2	1
55	VYH4516-001	Fine Tuning Bracket		1
56	VYH4221-001	Arm		1
57	T41572-001	Inductor	L701, 702	2
58	QET41CR-227	E. Capacitor	C702	1
59	VMW3035-301	P. W. Board	for R/P Head	1
60	VMW3113-001	P. W. Board	for Motor	1
61	VYH2125-001	Holder		1
62	VYH4567-001	Earth Plate		1
63	VXQ3028-002	Toggle Lever		2
64	VXQ3032-001	"		1
65	VXQ3033-001	"		1
66	VJD3193-002	Jack Board		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
67,73,75 76,82, 67	ZCRC656L-CBR	Rear Cabinet Ass'y		1 set
68	VJC1121-001	Rear Cabinet		1
69	QZR4147-001U	Rod Antenna		2
70	VYH4189-001	Holder (B)		2
	VYH4010-002	Battery Contact		2
71	53738-009	Spring		1
72	V44686-002	Spring		1
73	VYH4568-00A	Shield Ass'y		1
74	VND4027-001	Dolby Label		1
75	VYN5066-001CBS	Name Plate	RC-656LB	1
	VYN5066-002C	"	RC-656L	1
76	V41583-3	Tape		1
77	VYSA1R4-050	Spacer		2
78	VJT4029-00A	Cassette Door Ass'y		1
79	V44910-002	Cassette Spring		2
80,81	ZCRC656L-BCA	Battery Cover Ass'y		1 set
80	VJC2016-004	Battery Cover		1
81	VYSH106-020	Spacer		1
82	VYSA1R6-009	"		4
83	VXKM520-20013	Knob		1
84	VXL4008-002	Tuning Knob		1
85	VXL4122-002	Knob		3
86	VXL4123-002	"		1
87	53866-2	Label		1
88	VTP54N2-12ES	Power Transformer	RC-656LB	1
	VTP54N2-12E	"	RC-656L	1
89	VY4570-001	Trans Bracket		1
101	REE3000X	E Ring	Chassis base	1
102	WBS3000N	Washer	P.W.B. ~ Mecha	1
103	DPSP3006ZS	Ass'y Screw	Trans Bracket	2
104	SBSF3008Z	Tapping Screw	E. C. Mic. Holder x 2 Woofer x 8	21
			Mic Wire terminal x 1 L.E.D. P.W.B. x 1	
			Tweeter x 2 Connect Bracket x 2	
			Earth Catcher x 1 Holder (B) x 4	
105	SBSF3010Z	"	Tweeter Holder Dump Ass'y x 2	17
			~ Front Cabinet x 2 Tuner chassis	
			Door Spring x 1 ~ P.W.B. x 2	
			Chassis Ass'y ~ Fine Tuning Bracket x 1	
			Front cabinet x 5 Holder ~ P.W.B. x 2	
			Jack Board ~ P.W.B. x 2	
106	SBSF3012C	"	Tuner CB ~	8
			Front Cabinet x 3	
107	SBSF3020R	"	Arm Ass'y ~ Front Cabinet x 5	6
			Front Cabinet	
			~ Rear Cabinet	
108	SBSF4020C	"	Trans Bracket	2
109	SDSP3010RS	Screw	Front Cabinet	6
			~ Rear Cabinet x 2	
			Bracket x 4	
110	SPSP3006VS	"	P. W. B ~ Mecha	2
111	SPSP3012VS	"	"	1
112	SPSP3014ZS	"	Bracket	2
113	SPSP3035VS	"	P. W. B ~ Mecha	1
114	SSSP2610Z	Tapping Screw	for Arm	1
115	SDSP3010RS	Screw	Front Cabinet	2
			~ Rear Cabinet	

Amplifier P.W. Board Parts

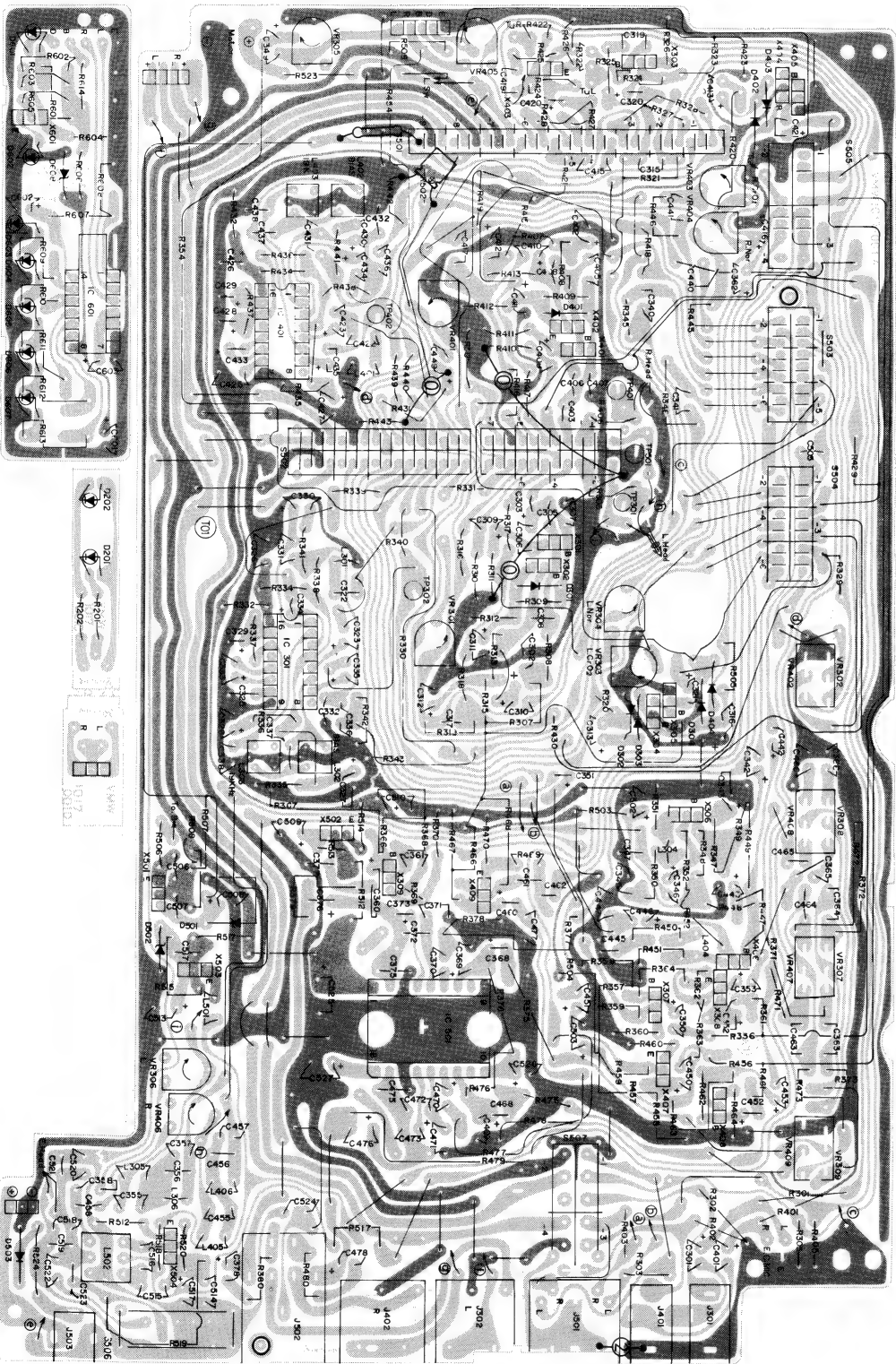


Fig. 27

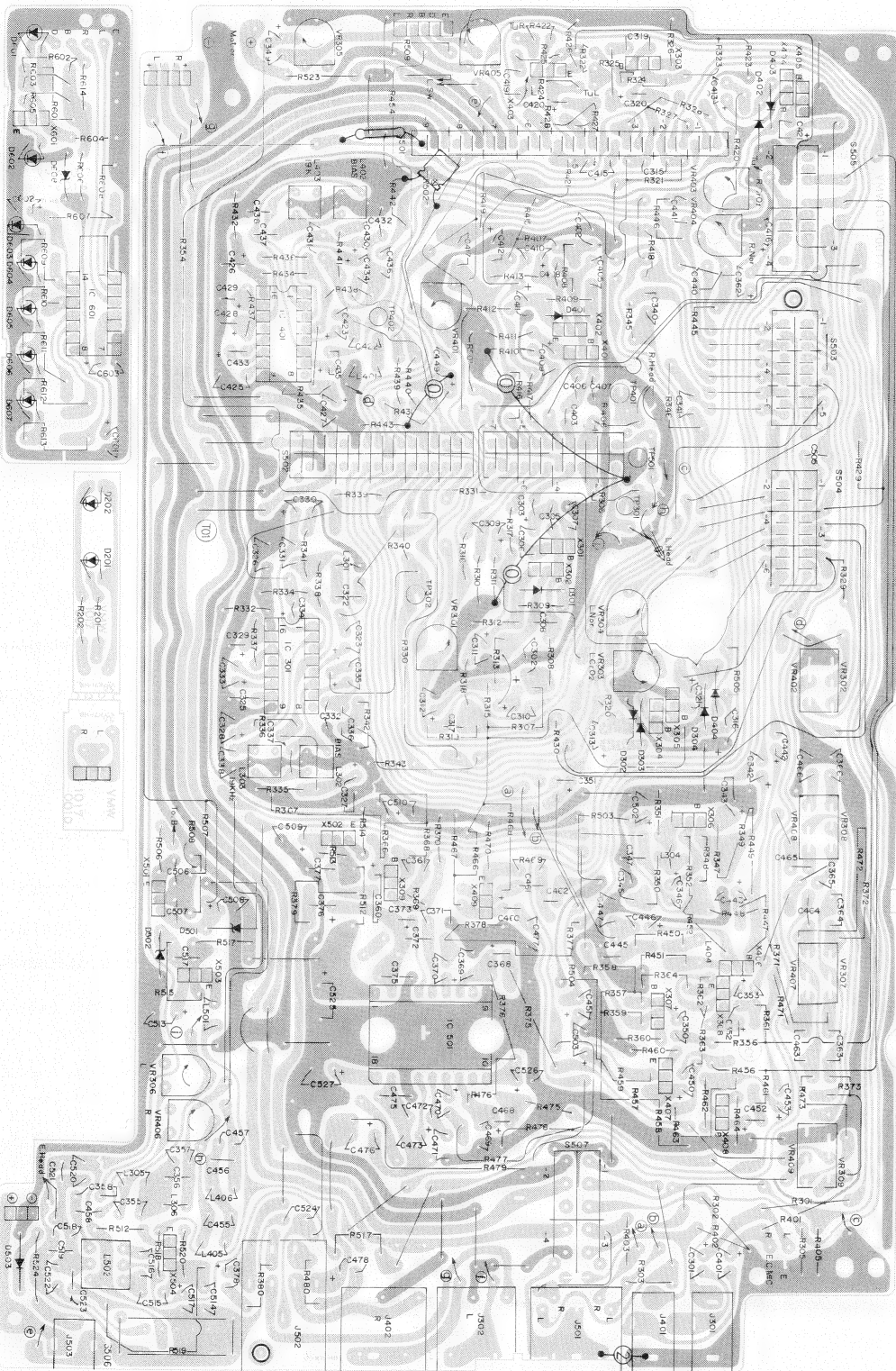
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC301,401	NE646BN	Dolby NR	3.5	4.6	5.1	4.7	4.6	4.8	4.0	0	0	4.7	4.8	4.7	0	4.7	4.6	9.3	
IC501	AN7146H	Power Amp.	0.5	6.1	0	11	0.7	3.0	3.0	0	0	3.1	0	3.0	3.0	0.7	11.0	0	6.1

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC601	LB1416	LED Amp.	0.6	0	0	2.7	2.7	0	0	3.8	0	0	0	0	1.2

		E	C	B	
X601	2SD636	LED Amp.	1.9	7.6	2.6

			E	C	B				E	C	B
X301,401	2SC1335	Pre Amp.	0.3	1.7	0.9	X309,409	2SC945L	Biphonic	2.3	7.4	2.9
X302,402	2SC1335	Pre Amp.	1.1	7.3	1.7	X501	2SD468	Ripple Filter	2.9	11.7	3.5
X303,403	2SC1335	Tuner Amp.	2.2	4.7	2.8	X502	2SD468	Ripple Filter	10.2	11.5	11.0
X306,406	2SC945L	Rec Amp.	0.4	3.0	1.0	X503	2SD468	Regulator	8.3	11.9	8.7
X307,407	2SC945L	DIN Amp.	0.5	4.0	1.1	X504	2SD468	Bias OSC	0.1	4.3	0.7
X308,408	2SC945L	Amp.	2.1	4.3	2.7						

Amplifier P.W. Board Parts



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC301,401	NE646BN	Dolby NR	3.5	4.6	5.1	4.7	4.6	4.8	4.0	0	0	4.7	4.8	0	4.7	4.6	9.3	
IC501	AN7146H	Power Amp.	0.5	6.1	0	11	0.7	3.0	3.0	0	0	3.1	0	3.0	0.7	11.0	0	6.1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC601	LB1416	LED Amp.	0.6	0	0	2.7	2.7	0	0	3.8	0	0	0	1.2

			E	C	B
X601		2SD636	LED Amp.	1.9	7.6
					2.6

Fig. 27

			E	C	B				E	C	B
X301,401	2SC1335	Pre Amp.	0.3	1.7	0.9	X309,409	2SC945L	Biphonic	2.3	7.4	2.9
X302,402	2SC1335	Pre Amp.	1.1	7.3	1.7	X501	2SD468	Ripple Filter	2.9	11.7	3.5
X303,403	2SC1335	Tuner Amp.	2.2	4.7	2.8	X502	2SD468	Ripple Filter	10.2	11.5	11.0
X306,406	2SC945L	Rec Amp.	0.4	3.0	1.0	X503	2SD468	Regulator	8.3	11.9	8.7
X307,407	2SC945L	DIN Amp.	0.5	4.0	1.1	X504	2SD468	Bias OSC	0.1	4.3	0.7
X308,408	2SC945L	Amp.	2.1	4.3	2.7						

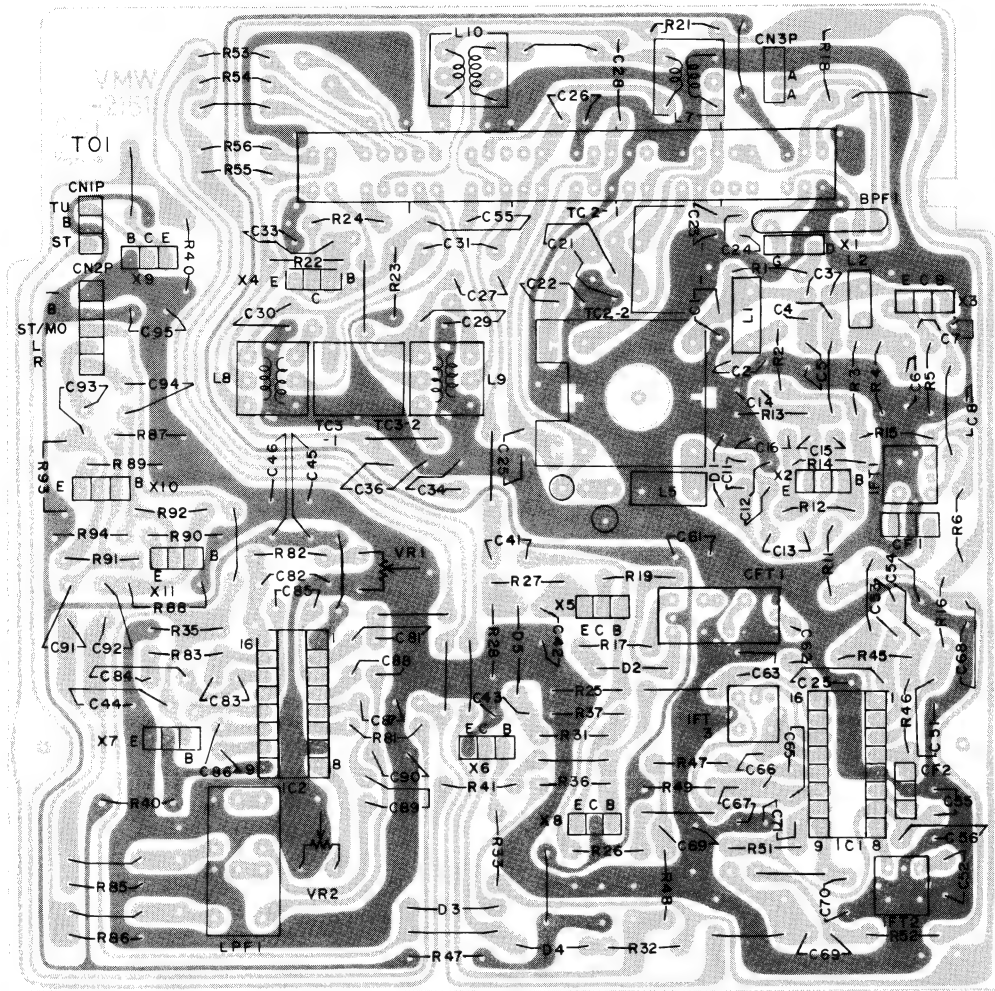
Amp. P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
S501-1---9	VMW1017-001A	P. W. Board	for Amp	
S502-1---18	VMW1017-001B	"	for LED	
S503-1---6	QSS9201-002	Slide Switch		1
S504-1---6	QSSJ201-001	"		1
S505-1---4	QSS6201-102	"		2
	QSS4301-023	"		1
S506	QSS1301-001	"		1
S507-1---4	QSP4210-061	Push Switch		1
J301, 401	QMS3501-014	Socket		2
J302, 402	QMC0289-003	DIN SPK Socket		2
J501	QMC9014-006	DIN Socket		1
J502	QMS6312-004	Headphone Jack		1
J503	QMA1221-004	Ext. Batt. Jack		1
VR301, 401, 303	QVP8A0B-024	V. Resistor		6
403, 304, 404				
VR302, 402	QVD8A3A-054VM	"		1
VR305, 405	QVP8A0B-014	"		2
VR306, 406	" -015	"		2
VR307, 407	QVD7A3B-115VM	"		2
308, 408				
VR309, 409	QVD8A3A-024VM	"		1
IC301, 401	NE646BN	IC		2
IC501	AN7146 (H)	"		1
IC601	LB1416	"		1
X301, 401, 302	2SC1335 (D)	Transistor		6
402, 303, 403				
X304, 404, 305	2SC945L (Q,P)	Transistor		12
405, 306, 406				
307, 407, 308				
408, 309, 409				
X501, 502	2SD468 (B, C)	"		4
503, 504				
X601	2SD636 (R, S)			1
D301, 401, 302	HV80	Si. Diode		8
402, 303, 403				
304, 404				
D501	HZ7C	Zener Diode		1
D502	HZ9B2	"		1
D503	10E2-B	"		1
D601 ~607	SLP146B	Si. Diode		7
D608	HZ6B	Zener Diode		1
L301, 401, 305	VQP0001-183	Inductor		6
405, 306, 406				
L302, 402	VQZ0006-001	Dolby Filter		2
L303, 403	VQZ0004-001	"		2
L304, 404	VQP0001-562	Inductor		2
L501	VQP0002-471M	"		1
L502	V03083-019	OSC Coil		1
C301, 401	QEB41HM-224	E. Capacitor (Low Leak)	0.22 μ F 50 V	4
323, 423				
C302, 402, 312	QET41CR-107	E. Capacitor	100 μ F 16 V	5
412, 502				
C303, 403	QEB41EM-106M	E. Capacitor (Low Leak)	10 μ F 25 V	2
C304	QET41CR-476	E. Capacitor	47 μ F 16 V	1
C305, 405	QCS11HJ-510	C. Capacitor	51 pF 50 V	2
C306, 406, 308	" -151	"	150 pF "	6
408, 506, 507				
C307, 407	" -561	"	560 pF "	2

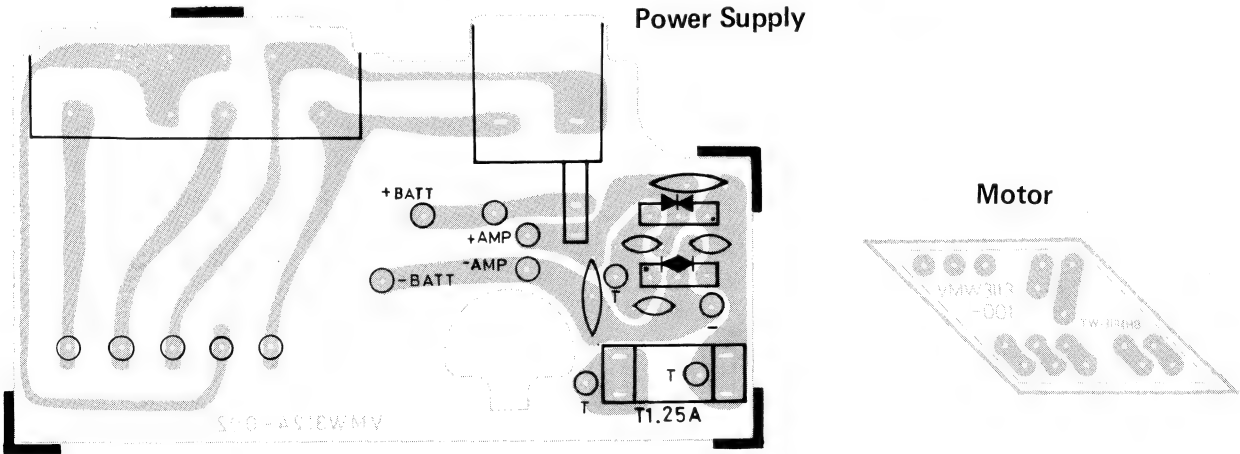
Ref. No.	Parts No.	Parts Name	Remarks		Q'ty
C309, 409	QET41AR-107	E. Capacitor	100 μ F	10 V	2
C310, 410	QET41ER-226	"	22 μ F	25 V	2
C313, 413	QET41HR-474	"	0.47 μ F	50 V	2
C315, 415, 317	QFM41HJ-103	Mylar Capacitor	0.01 μ F	"	9
417, 361, 461					
366, 466, 524					
C316, 416, 321	QET41CR-106	E. Capacitor	10 μ F	16 V	15
421, 330, 430					
333, 433, 334					
434, 335, 435					
603, 311, 411					
C319, 419	QCS11HJ-820	C. Capacitor	82 pF	50 V	2
C320, 420, 342	QET41HR-335	E. Capacitor	3.3 μ F	"	14
442, 350, 450					
351, 451, 352					
452, 353, 453					
378, 478					
C322, 422	QCS11HJ-391	C. Capacitor	390 pF	"	2
347, 447					
C325, 425	QFM41HJ-473	Mylar Capacitor	0.047 μ F	"	4
363, 463					
C326, 426, 503	QET41CR-227	E. Capacitor	220 μ F	16 V	3
C327, 427, 526	QET41AR-227	"	220 μ F	10 V	3
C328, 428	QEB41HM-104	E. Capacitor (Low Leak)	0.1 μ F	50 V	4
343, 443					
C329, 429	QEB41HM-334	E. Capacitor (Low Leak)	0.33 μ F	50 V	4
360, 460					
C331, 431	QFM41HJ-472	Mylar Capacitor	0.0047 μ F	50 V	4
338, 438					
C332, 432	" -273	"	0.027 μ F	"	2
C336, 436	" -562	"	0.0056 μ F	"	2
C337, 437	QCS11HJ-251	C. Capacitor	250 pF	"	2
C340, 440	QCY41HK-681	Mylar Capacitor	680 pF	"	4
371, 471					
C341, 441	QFM41HJ-102	"	0.001 μ F	"	2
C345, 445	" -123	"	0.012 μ F	"	2
C346, 446	QET41HR-105	E. Capacitor	1 μ F	"	4
349, 449					
C355, 455, 322, 422	QCS11HJ-331	C. Capacitor	330 pF	"	6
356, 456					
C357, 457	" -200	"	20 pF	"	2
C358, 458	" -301	"	300 pF	"	2
C362, 462, 602	QET41HR-475	E. Capacitor	4.7 μ F	"	3
C364, 464	QFM41HJ-823	Mylar Capacitor	0.082 μ F	"	2
C365, 465, 515	" -332	"	0.0033 μ F	"	3
C368, 468	QEB41HM-105	E. Capacitor	1 μ F	"	2
C369, 469	QCY41HK-222	C. Capacitor	0.0022 μ F	"	2
C370, 470	QET41AR-476	E. Capacitor	47 μ F	10 V	2
C372, 472	QCS11HJ-560	"	56 pF	"	2
C373, 473, 601	QET41CR-336	"	33 μ F	16 V	3
C375, 475	QFM41HK-823	Mylar Capacitor	0.082 μ F	50 V	2
C376, 476, 508	QET41AR-108	E. Capacitor	1000 μ F	10 V	3
C377, 477, 516	QFM41HJ-223	Mylar Capacitor	0.022 μ F	50 V	3
C505	QCS11HJ-361	C. Capacitor	360 pF	"	1
C509, 513	QET41CR-477	E. Capacitor	470 μ F	16 V	2
C510	" -108	"	1000 μ F	"	1
C512	QCS11HJ-271	C. Capacitor	270 pF	50 V	1
C514	QFM41HJ-333	Mylar Capacitor	0.033 μ F	50 V	1
C518	QFM42AK-822	"	0.0082 μ F	100 V	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
C519	QCF11EZ-222	C. Capacitor	0.0022 μ F 25 V	1
C520	QFM42AK-222	Mylar Capacitor	0.0022 μ F 100 V	1
C521	" -392	"	0.0039 μ F "	1
C522	" -152	"	0.0015 μ F "	1
C523	" -682	"	0.0068 μ F "	1
C524	QCY41HK-332	C. Capacitor	0.0033 μ F "	1
C525	QET41CR-228	E. Capacitor	2200 μ F 16 V	1
C527, 517	QET41AR-477	"	470 μ F 10 V	2
R303, 403	QRD147J-225S	C. Resistor	2.2 M Ω 1/4 W	2
R305, 405, 313 413, 318, 418 343, 443	" -472S	"	4.7 k Ω "	8
R306, 406 506, 514, 517	" -100S	"	10 Ω "	5
R308, 408 520, 604	" -223S	"	22 k Ω "	4
R309, 409 325, 425	" -334S	"	330 k Ω "	4
R310, 410, 339 439, 340, 440	" -181S	"	180 Ω "	6
R311, 411 370, 470	" -122S	"	1.2 k Ω "	4
R312, 412	" -272S	"	2.7 k Ω "	2
R316, 416 317, 417	" -682S	"	6.8 k Ω "	4
R322, 422	QRD143J-333S	"	33 k Ω "	2
R324, 424, 362 462, 505, 602	QRD147J-564S	"	560 k Ω "	6
R326, 426	" -152S	"	1.5 k Ω "	2
R332, 432	" -220S	"	22 Ω "	2
R334, 434 335, 435	" -102S	"	1 k Ω "	4
R336, 436	" -184S	"	180 k Ω "	2
R337, 437	" -274S	"	270 k Ω "	2
R338, 438 364, 464	" -332S	"	3.3 k Ω "	4
R341, 441	" -473S	"	47 k Ω "	2
R342, 442	" -104S	"	100 k Ω "	2
R348, 448	" -394S	"	390 k Ω "	2
R360, 460	" -681S	"	680 Ω "	2
R501	QRD121J-106	"	10 M Ω 1/2 W	1
R508, 509, 511, 512	QRH141J-100	Fusible Resistor	10 Ω 1/4 W	4
R517	QRD147J-680S	C. Resistor	68 Ω "	1
R518	QRD147J-121S	C. Resistor	120 Ω "	1
R606	" -151S	"	150 Ω "	1
R521	" -4R7S	"	4.7 Ω "	1
R523, 524	QRX019J-1R0	MF Resistor	1 Ω 1 W	2
R526	QRD141J-271S	C. Resistor	270 Ω 1/4 W	1
R603	QRD147J-563S	"	56 k Ω "	1
R605	" -331S	"	330 Ω "	1
R614	" -330S	"	33 Ω "	1
	V44611-002	Formed Bus Wire		8
	" -003	"		8
	" -005	"		9
	" -006	"		3
	V44691-001	Wire Clamp		12
CN501P	QMV5005-005	Connector		1
CN502P	QMV5004-004	"		1
CN503P	" -003	"		1
	VYH4574-001	Radiation Plate		1
	VYH4334-001	Earth Contact		1
	SPSP3012ZS	Screw		1
	A74138-2	Test Pin		6

Tuner P.W. Board Parts



Pin	IC 1		IC 2	
No.	FM	AM	FM/AM	
1	1.8	1.2	6.5	
2	1.8	1.2	2.1	
3	5.2	1.8	2.9	
4	1.8	2.0	2.5	
5	0	0	2.3	
6	1.3	1.3	5.1	
7	2.0	2.0	0	
8	2.0	2.0	0.5	
9	2.2	2.4	1.5	
10	2.2	2.4	1.3	
11	5.4	5.8	1.3	
12	3.5	0.5	0.1	
13	0	0	1.3	
14	2.0	2.0	1.3	
15	0.3	0.2	1.3	
16	0.9	0.9	0.4	



Power Supply

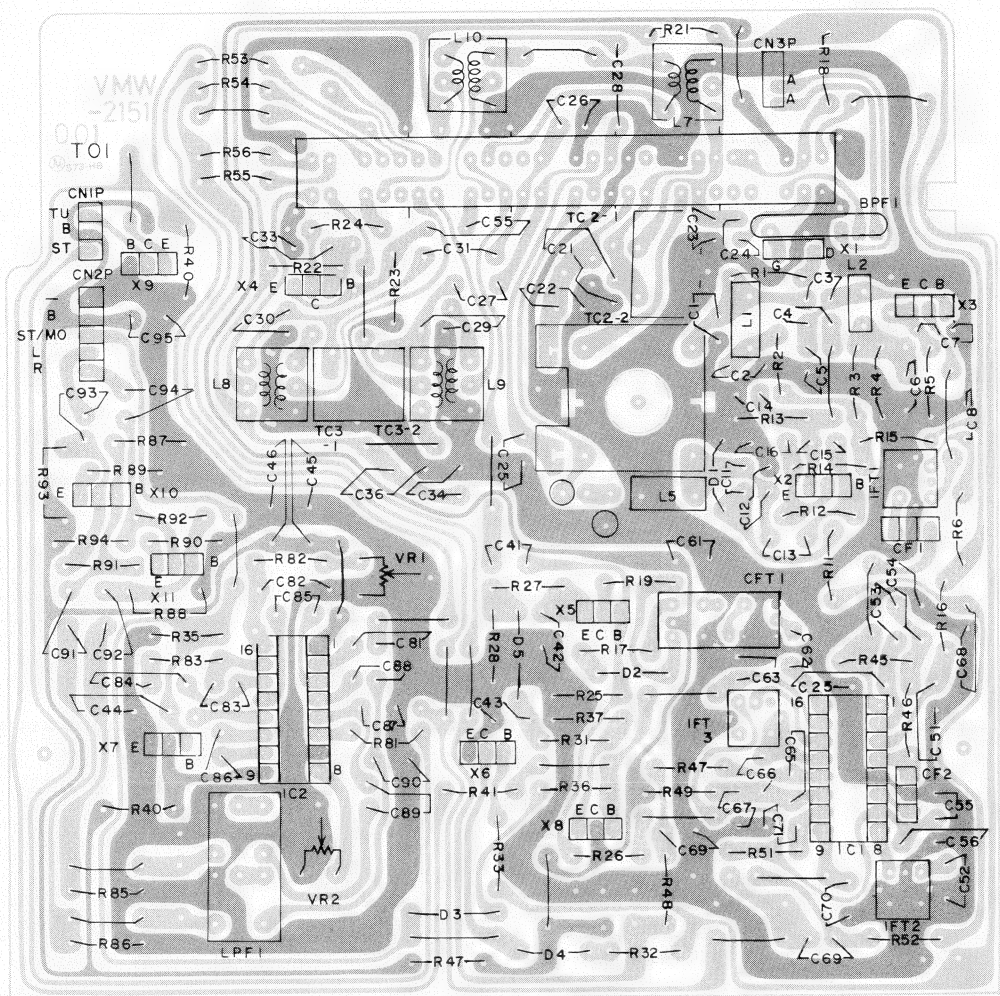
Motor

Fig. 29

			E	C	B
X1	2SK212	FM RF AMP.	(K) 0	(A) 3.0	0
X2	2SC1342	FM LOC OSC	1.2	5.2	1.9
X3	2SC535	FM MIX	1.3	5.3	2.0
X4	2SC2839	AM LOC OSC	2.0	4.7	2.5
X6	2SC1684	Switching			
X7	2SC1684	Switching			
X8	2SC458	AM AGC Amp.			
X9	2SC1684	LED Drive			
X10	2SC458	LF Amp.	1.0	3.8	1.6
X11	2SC458	LF Amp.	1.0	3.8	1.6

		B	C	E	X8		B	C	E	X9		B	C	E
X6	AM	0.7	0.03	0		FM No. Signal	0.01	5.7	0.2		FM No. Signal	0.2	5.1	0
	FM	0.35	0.2	0		FM Signal	1.4	5.6	0.8		FM Signal	0.7	3.5	0
X7	FM No. Signal	0	1.5	0		AM No. Signal	0.01	6.2	0.2		AM No. Signal	0.1	5.2	0
	FM Signal	0	0.03	0		AM Signal	1.9	5.9	1.3		AM Signal	0.7	2.3	0
	AM	0	1.5	0										

Tuner P.W. Board Parts



Pin	IC 1		IC 2
No.	FM	AM	FM/AM
1	1.8	1.2	6.5
2	1.8	1.2	2.1
3	5.2	1.8	2.9
4	1.8	2.0	2.5
5	0	0	2.3
6	1.3	1.3	5.1
7	2.0	2.0	0
8	2.0	2.0	0.5
9	2.2	2.4	1.5
10	2.2	2.4	1.3
11	5.4	5.8	1.3
12	3.5	0.5	0.1
13	0	0	1.3
14	2.0	2.0	1.3
15	0.3	0.2	1.3
16	0.9	0.9	0.4

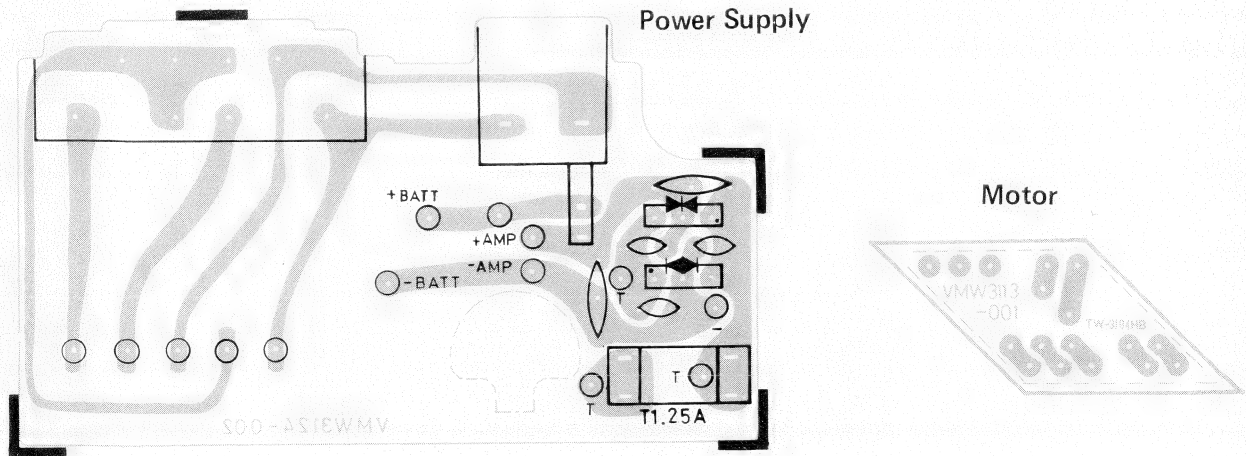


Fig. 29

			E	C	B
X1	2SK212	FM RF AMP.	(K) 0	(A) 3.0	0
X2	2SC1342	FM LOC OSC	1.2	5.2	1.9
X3	2SC535	FM MIX	1.3	5.3	2.0
X4	2SC2839	AM LOC OSC	2.0	4.7	2.5
X6	2SC1684	Switching			
X7	2SC1684	Switching			
X8	2SC458	AM AGC Amp.			
X9	2SC1684	LED Drive			
X10	2SC458	LF Amp.	1.0	3.8	1.6
X11	2SC458	LF Amp.	1.0	3.8	1.6

		B	C	E			B	C	E			B	C	E
X6	AM	0.7	0.03	0	X8	FM No. Signal	0.01	5.7	0.2	X9	FM No. Signal	0.2	5.1	0
	FM	0.35	0.2	0		FM Signal	1.4	5.6	0.8		FM Signal	0.7	3.5	0
X7	FM No. Signal	0	1.5	0		AM No. Signal	0.01	6.2	0.2		AM No. Signal	0.1	5.2	0
	FM Signal	0	0.03	0		AM Signal	1.9	5.9	1.3		AM Signal	0.7	2.3	0
	AM	0	1.5	0										

Tuner P.W. Board Parts List

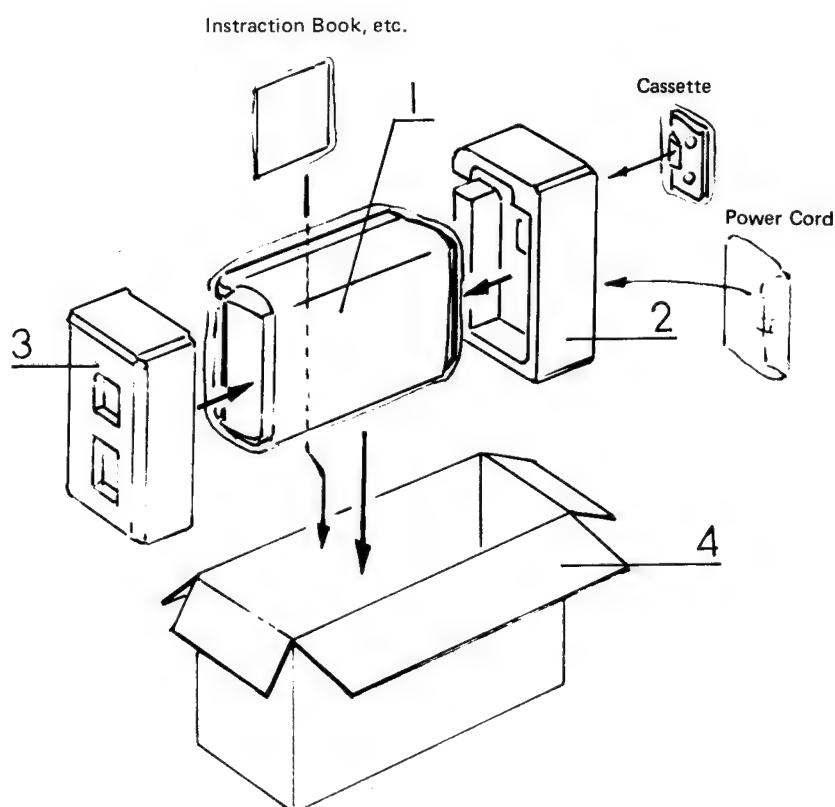
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
IC1	VMW2151-001	P. W. Board	for Tuner	1
IC2	HA12413	IC		1
X1	AN7410	"		1
X2	2SK212 (E)	Transistor		1
X3	2SC1342 (B)	"		1
	2SC535 (B)	"		1
X4, 5	2SC2839(D)	"		2
X6, 7, 9	2SC1684 (R, S)	"		3
X8, 10, 11	2SC458 (C)	"		3
D1	MA345	Si. Diode		1
D2, 4	HV80	"		2
D3, 5	1N34A	Ge Diode		2
	V44611-002	Formed Bus Wire	(10 mm)	23
	V44611-005	"	(12.5 mm)	2
	VKL3143-001	Board in Tab		13
BPF1	VBP3M5F-001	Band Pass Filter		1
LPF1	VQZ0011-001	Low Pass Filter		1
	VYH4694-001	Shield Case		1
CF1, 2	VCF2L3B-102	Ceramic Filter		2
L1, 5	VQF1B20-001	Coil	FM	2
L2	VQP0004-R68	Inductor	FM	1
L4, 6	VQB012B-302T	Bar Antenna		1
L7	VQR1014-301	Ant. Coil	SW	1
L8	VQL1T03-301	OSC Coil	LW	1
L9	VQM1T03-301	"	MW	1
L10	VQS1T03-205	"	SW	1
IFT1	VQT7F12-104	IFT	FM	1
IFT2	VQT7F07-501	"	"	1
IFT3	VQT7A11-301	"	AM	1
CFT1	V03067-026	CFT	AM	1
	VYH4369-003	Shield		1
VR1	QVP8A0B-014	V. Resistor		1
VR2	QVP8A0B-054	"		1
R1	QRD147J-220S	C. Resistor	22 Ω 1/4 W	1
R2, 6	" -471	"	470 Ω "	2
R3, 37	" -682S	"	6.8 k Ω "	2
R4, 23, 28	" -392S	"	3.9 k Ω "	3
R5, 13	" -152S	"	1.5 k Ω "	2
R11, 52	" -104S	"	100 k Ω "	2
R12, 22	" -334S	"	330 k Ω "	2
R14, 45	" -331S	"	330 Ω "	2
R15, 18, 42, 49, 57	" -470S	"	47 Ω "	5
R16	" -181S	"	180 Ω "	1
R17, 40, 87, 88	" -273S	"	27 k Ω "	4
R19, 27	" -101S	"	100 Ω "	2
R21	" -221S	"	220 Ω "	1
R24, 31	" -182S	"	1.8 k Ω "	2
R25, 51	" -562S	"	5.6 k Ω "	2
R26, 48	" -332S	"	3.3 k Ω "	2
R32	" -472S	"	4.7 k Ω "	1
R33, 91, 92	" -333S	"	33 k Ω "	4
R35	" -823S	"	82 k Ω "	1
R43	" -473S	"	47 k Ω "	1
R41, 54, 56, 34	" -153S	"	150 k Ω "	4
R46, 53	" -103S	"	10 k Ω "	2
R47	" -222S	"	2.2 k Ω "	1
R55, 36	" -393S	"	39 k Ω "	2
R81	" -100S	"	10 Ω "	1
R82	" -183S	"	18 k Ω "	1
R85, 86	" -123S	"	12 k Ω "	2
R89, 90, 83	" -102S	"	1 k Ω "	3

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R93, 94	QRD147J-272S	C. Resistor	2.7 k Ω 1/4 W	2
C1	QCT05CH-180	C. Capacitor	18 pF "	1
C2, 16, 35, 62	QCF11EZ-103	"	0.01 μ F 25 V	4
C3	QCT05CH-5R0	"	5 pF 50 V	1
C4	QCT05CH-7R0	"	7 pF "	1
C5	QCT05CH-100	"	10 pF	1
C7, 8, 33, 45 56, 61, 67	QCF11EZ-223	"	0.022 μ F 25 V	5
C11, 24	QCS11HJ-8R0	"	8 pF 50 V	2
C21	" -150	"	15 pF "	1
C12, 13, 14	QCT05CH-150	"	15 pF	3
C15	" -120	"	12 pF	1
C20, 32	QCS11HJ-3R0	"	3 pF 50 V	2
C22	" -390	"	39 pF "	1
C23, 25	" -100	"	10 pF "	2
C26	" -270	"	27 pF "	1
C27, 6	" -331	"	330 pF "	2
C28	QFS21HJ-392	P. Capacitor	0.0039 μ F "	1
C30	QCS11HJ-390	C. Capacitor	39 pF "	1
C31	QFS21HJ-181	P. Capacitor	180 pF "	1
C29	QCT05WK-120	C. Capacitor	12 pF	1
C34, 46	QET41AR-107	E. Capacitor	100 μ F 10 V	2
C36, 42, 43	QCF11EZ-473	C. Capacitor	0.047 μ F 25 V	3
C41	QCY41HK-472	"	0.0047 μ F 50 V	1
C51	QET41CR-106	E. Capacitor	10 μ F 16 V	1
C52, 53, 54	QFM41HM-223	Mylar Capacitor	0.022 μ F 50 V	3
C55	QET41AR-227	E. Capacitor	220 pF 10 V	1
C57	QCF11EM-223	S. E. Capacitor	0.022 μ F 50 V	1
C63	QET41CR-226	E. Capacitor	22 μ F 16 V	1
C64	QCF11EM-103	S. E. Capacitor	0.01 μ F 50 V	1
C65	QFM41HM-103	Mylar Capacitor	0.01 μ F "	1
C66	QET41AR-476	E. Capacitor	47 μ F 10 V	1
C68	QEB41HM-105	"	1 μ F 50 V	1
C69, 93, 94, 44	QET41HR-475	"	4.7 μ F "	4
C70, 72, 73	QCS11HJ-151	C. Capacitor	150 pF "	3
C71	QET41HR-105	E. Capacitor	1 μ F "	1
C81, 88, 89, 91, 92	QET41HR-335	"	3.3 μ F "	5
C82	QFS21HJ-471	P. Capacitor	470 pF "	1
C83, 84, 86	QEC41HM-474	E. Capacitor	0.47 μ F "	3
C85	QFM41HM-473	Mylar Capacitor	0.047 μ F "	1
C87, 90	" -333	"	0.033 μ F "	2
C95	QET41AR-477	E. Capacitor	470 μ F 10 V	1
VC1-1, 2, 3, 4	QAP1224-512	V. Capacitor		1
TC1-1, 2, 3, 4				
TC3-1, 2	QAT2002-001	T. Capacitor		2
TC2-1, 2				
S1-1---10	QSSA401-002	Slide Switch		1
CN2-1---5	QMV5005-005	Connector	5 P	1
CN1-1---3	QMV5005-003	"	3 P	2
CN3-1---3				

Power Supply P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
D801, 802	VMW3124-001	P. W. Board		1
D803, 804	DS131A	Si. Diode		1
C801, 802, 803	DS132A	"		1
C804, 805	QCF11EZ-223	C. Capacitor	0.022 μ F 25 V	3
	QCC11EM-154	"	0.15 μ F "	2
J801	VKL3143-001	Board in Tab		2
	QMC0263-002BS	AC Socket	RC-656LB	1
	QMC0263-002	"	RC-656L	1
S801-1, 2	QSS2325-101BS	Slide Switch	RC-656LB	1
	QSS2325-101	"	RC-656L	
	QMF51A2-1R25BS	Fuse	RC-656LB	1
	QMF51A2-1R25	"	RC-656L	
	A44594-001	Fuse Clip		2

Packing



Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VPH4103-002	Door Protector		1
2	VPH1213-001	Side Cushion	Left	1
3	VPH1214-001	Side Cushion	Right	1
4	VPD5066-J01	Carton	RC-656LB	1
	VPD5066-J03	"	RC-656L	1
2 ~ 4	VDP5066-002A	Carton Ass'y	RC-656L	1
5	QPGA065-05004	Poly Bag	for set	1
6	VHPJ109-039	Paper Sheet		1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
VGT12S3-J04	Cassette Tape		1
QMP9017-009BS	Power Cord	RC-656LB	1
QMP3950-183	"	RC-656L	1
QZL1002-003BS	Warning Label	RC-656LB	1
QPGA012-02505	Poly Bag	for power cord	1
VNF0794-001	Feature Sticker		1
31465-18	Mark	RC-656LB	1
VYA4001-00A	Head Cleaning Stick		1
QPG8024-03404	Poly Bag	for Instruction Book	1
BT20013C	Guarantee Certificate	RC-656LB	1
VNM0799-301	Instruction Book		1
VNC6305-001	Troubleshooting		1

JVC

SERVICE MANUAL

MODEL RC-656LD

LW - MW - SW - FM

4-BAND STEREO RADIO CASSETTE RECORDER

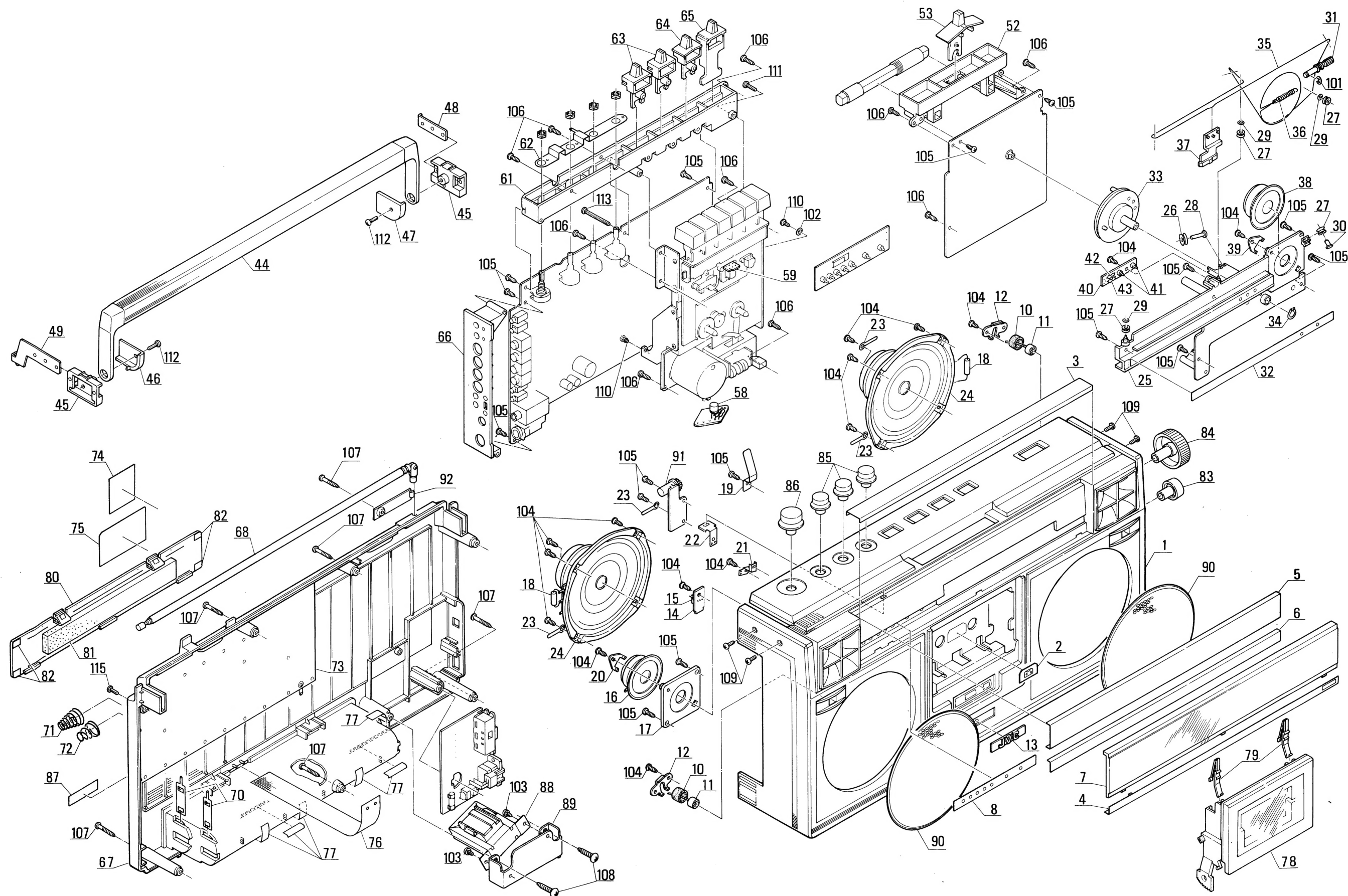
Please note that the model RC-656LD is the same as RC-656L except relation parts to the enclosure assembly. As the other parts not listed here are the same as those of RC-656L, refer to the service manual (No. 1422) of the model RC-656L/LB.

Assembly Parts List

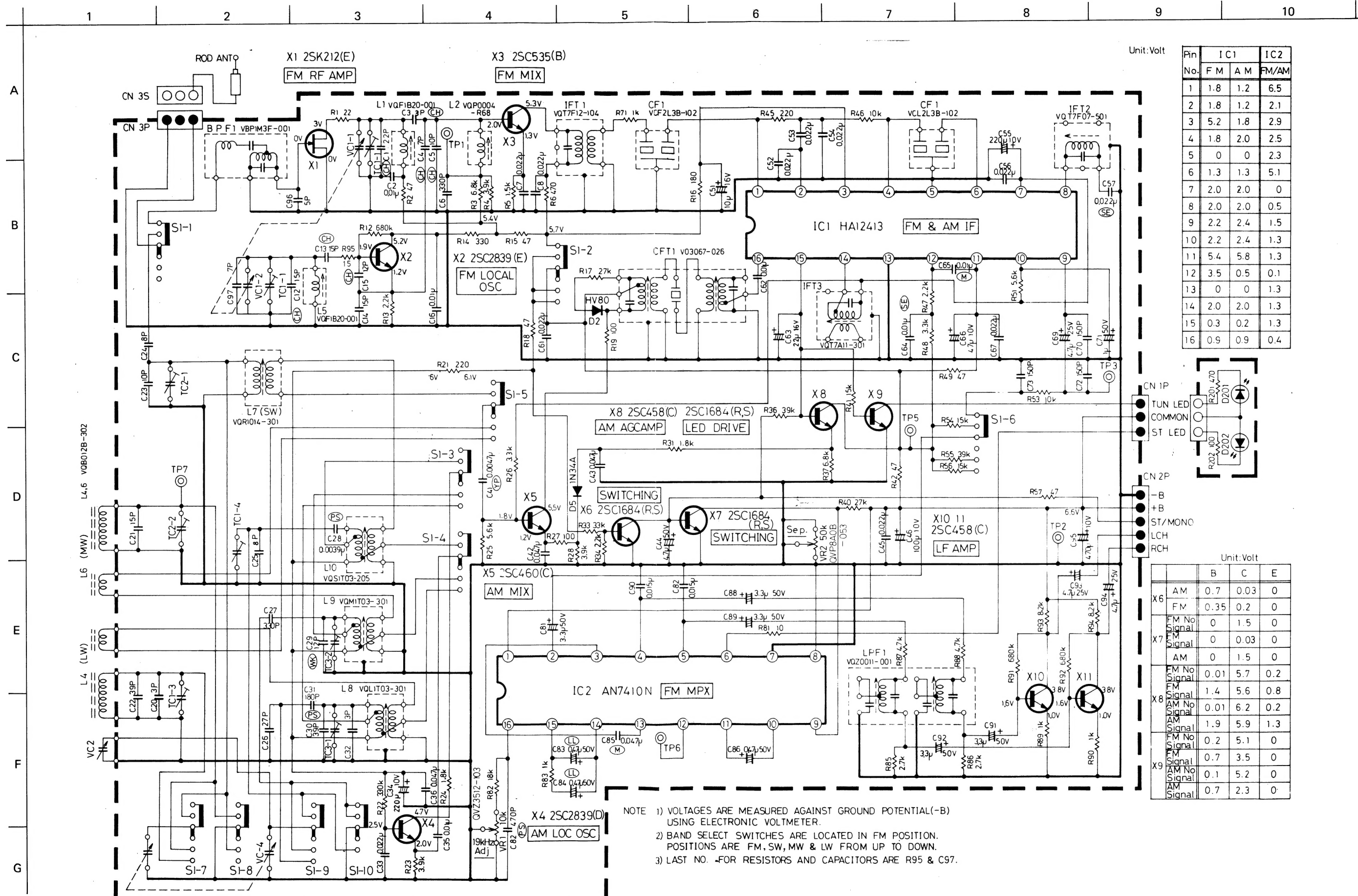
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1-8,13, 21,22	ZCRC656LD-CBF	Front Cabinet Ass'y		1
1	VJC1225-002	Front Cabinet		1
2	VJD4005-002	Reflection Plate		1
3	VJD4412-002	Button Plate		1
4	VJD4413-001	Fitting		1
5	VJK3159-004	Dial Scale (A)		1
6	VJK3160-003	" (B)		1
7	VJK3161-001	Dial Lens		1
8	VJK4123-002	Scale Plate (A)		1
10	VYH4102-001	Mic. Bushing		2
11	VMME62N-026	E.C. Mic.		2
12	VYH4298-001	Holder		2
13	VJD4018-002	Mark		1
14	VMW1023-102D	P.W. Board	for Mic.	—
15	QMV5005-003	Connector	CN701-1 ~ 3	1
16	EAS5PH08SA	Speaker	SPKR302	1
17	VYH4565-002	Tweeter Holder		1
18	QEN21EM-335	N.E. Capacitor	C380, C480 3.3 μ F, 25 V	2
19	VKY4165-002	Door Spring		1
20	VYH4352-002	Clamp	for Tweeter	1
21	V44981-001	Earth Catcher		1
22	VYH4389-001	"		1
23	VKZ4001-007	Wire Holder		7
24	EAS16P127SH	Speaker	SPKR301, SPKR401	2
25	VYH2122-002	Chassis Base		1
26	VYH4032-001	Roller		1
27	VYH4002-001	"		4
28	RTA4020	Rivet		1
29	V42562-1	Special Washer		3
30	RTA4010	Rivet		1
31	V41336-021	Tuning Shaft		1
32	VJK4124-002	Scale Plate (B)		1
33	VYH3177-003	Dial Drum		1
34	RCSA6000	C. Ring		1
35	VHR2TT9-05A	Dial Rope	1005 mm	1
36	E45679-001	Spring		1
37	VJN4049-00A	Needle Ass'y		1
38	EAS5PH08SA	Speaker	SPKR402	1
39	VYH4352-002	Clamp	for Tweeter	1
40	VMW1023-102C	P.W. Board	for Tuner LED	—

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
41	SLP146B	L.E.D.	D201, D202	2
42	QRD147J-471S	C. Resistor	R201	1
43	" -101S	"	R202	1
44	VJH3005-00S	Handle Ass'y		1
45	VYH3120-001	Handle Supporter		2
46	V44943-001	Washer (L)		1
47	V44944-001	" (R)		1
48	VYH4224-001	Bracket		1
49	VYH4556-001	"		1
52	VYH2124-002	Tuner Chassis		1
53	VXQ3018-006	Toggle Lever	for Band	1
54	QAT5001-203	M.V. Capacitor		1
55	VYH4516-002	Fine Tuning Bracket		1
56	VYH4221-001	Arm		1
58	QET41CR-227	E. Capacitor	C702	1
59	VMW3035-302	P.W. Board	for R/P Head	1
61	VYH2125-002	Holder		1
62	VYH4567-001	Earth Plate		1
63	VXQ3028-004	Toggle Lever		2
64	VXQ3032-003	"		1
65	VXQ3033-002	"		1
66	VJD3232-001	Jack Board		1
67	VJC1226-002	Rear Cabinet		1
68	OZR4333-001	Rod Antenna		1
70	VYH4010-002	Battery Contact		2
71	53738-009	Spring		1
72	V44686-002	"		1
73	VYH4568-00B	Shield Ass'y		1
74	VND4027-005	Dolby Label		1
75	VYN5066-020C	Name Plate		1
76	V41583-3	Tape		1
77	VYSA1R4-050	Spacer		6
78	VJT4029-00A	Cassette Door Ass'y		1
79	V44910-002	Cassette Spring		2
80, 81	ZCRC656LD-BCA	Battery Cover Ass'y		1
80	VJC2016-006	Battery Cover		1
81	VYSH106-020	Spacer		1
82	VYSA1R6-009	"		4
83	VXKM520-20013	Knob		1
84	VXL4008-002	Tuning Knob		1
85	VXL4122-002	Knob		3
86	VXL4123-002	"		1
87	53866-2	Label		1
88	VTP54N2-12E	Power Transformer		1
89	VYH4570-003	Transformer Bracket		1
90	VJD3332-001	Punching Panel		1
91	VYH4936-001	Damp Holder		1
92	VJD4508-001	Antenna Cover		1
101	REE3000	E-Ring	Chassis Base	1
102	WBS3000N	Washer	P.W.B. — Mecha.	1
103	DPSP3006ZS	Ass'y Screw	Trans. Bracket	2
104	SBSF3008Z	Tapping Screw	E.C. Mic. Holder x 2, Mic. Wire Terminal x 1, Tweeter x 2, Earth Catcher x 1, Woofer x 8, L.E.D. P.W.B. x 1, Connect Bracket x 2, Holder (B) x 4	21
105	SBSF3010Z	"	Tweeter Holder — Front Cabinet x 2, Door Spring x 1 Chassis Ass'y — Front Cabinet x 5, Dump Ass'y x 2, Tuner Chassis — P.W.B. x 2, Fine Tuning Bracket x 1, Holder — P.W.B. x 2, Jack Board — P.W.B. x 2	17
106	SBSF3012C	Tapping Screw	Tuner CB — Front Cabinet x 3, Arm Ass'y — Front Cabinet x 5	8
107	SBSF3020R	"	Front Cabinet — Rear Cabinet	6
108	SBSF4020C	"	Trans. Bracket	2
109	SDSP3010RS	Screw	Front Cabinet — Rear Cabinet x 2, Bracket x 4	6
110	SPSP3006VS	Screw	P.W.B.— Mecha.	2
111	SPSP3012VS	"	"	1
112	SPSP3014ZS	"	Bracket	2
113	SPSP3035VS	"	P.W.B. — Mecha.	1
114	SSSP2610Z	Tapping Screw	for Arm	1
115	SDSP3010RS	Screw	Front Cabinet — Rear Cabinet	2

Assembly parts



Schematic Diagram of RC-656LD (Tuner circuit)



Tuner P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
IC1	HA12413	I.C.		1
IC2	AN7410N	"		1
BPF1	VBP1M3F-001	B.P. Filter		1
X1	2SK212(E)	Transistor		1
X2	2SC1342(B)	"		1
X3	2SC535(B)	"		1
X4	2SC2839(D)	"		1
X5	2SC460(C)	"		1
X6, 7, 9	2SC1684(R,S)	"		3
X8, 10, 11	2SC458(C)	"		3
D2	HV80	Si. Diode		1
D5	1N34A	Ge. Diode		1
L1	VQF1B20-001	Coil		1
L2	VQP0004-R68	Inductor		1
L4, 6	VQB012B-302	Bar Antenna		1
L5	VQF1B20-001	Coil		1
L7	VQR1014-301	Ant. Coil	SW	1
L8	VQL1T03-301	Osc. Coil	LW	1
L9	" -301	"	MW	1
L10	VQS1T03-205	"	SW	1
IFT1	VQT7F12-104	I.F.T.	IFT	1
IFT2	VQT7F07-501	"	FM	1
IFT3	VQT7A11-301	"	AM	1
CFT1	V03067-026	C.F.T.	AM	1
	VYH4369-003	Shield		1
BPF1	VYH4728-002	Shield Plate		1
LPF1	VBP1M3F-001	B.P. Filter		1
CF1, 2	VQZ0011-001	Low Pass Filter		1
VC1-1 ... 4, VC2-1 ... 4	VCF2L3B-102	Ceramic Filter		2
	QAP1224-512	V. Capacitor		1
TC3-1, 2, TC2-1, 2	QAT2002-001	T. Capacitor		2
S1-1 ... 10	QSSA401-002	Slide Switch		1
CN1-1 ... 3, CN3-1 ... 3	QMV5005-003	Connector		2
CN2-1 ... 5	" -005	"		1
VC1-1 ... 4, VC2-1 ... 4	QAP1224-512	V. Capacitor		1
VR1	QVZ3512-103	V. Resistor		1
VR2	QVP8A0B-053	"		1
R1	QRD147J-220S	C. Resistor	22 Ω 1/4 W	1
R2	" -470S	"	47 Ω "	1
R3, 37	" -682S	"	6.8 k Ω "	2
R4, 23, 28	" -392S	"	3.9 k Ω "	3
R5, 13	" -152S	"	1.5 k Ω "	2
R6	" -471S	"	470 Ω "	1
R12	" -824S	"	820 k Ω "	1
R14	" -331S	"	330 Ω "	1
R15, 18, 42, 49, 57	" -470S	"	47 Ω "	5
R16	" -181S	"	180 Ω "	1
R17, 40	" -273S	"	27 k Ω "	2
R19, 27	" -101S	"	100 Ω "	2
R21, 45	" -221S	"	220 Ω "	2
R22	" -334S	"	330 k Ω "	1
R24, 31	" -182S	"	1.8 k Ω "	2
R25, 51	" -562S	"	5.6 k Ω "	2
R26, 48	" -332S	"	3.3 k Ω "	2
R33, 46, 53, 55	" -103S	"	10 k Ω "	4
R34	QRD143J-222S	"	2.2 k Ω "	1
R36	QRD147J-393S	"	39 k Ω "	1
R41	" -153S	"	15 k Ω "	1
R47	" -222S	"	2.2 k Ω "	1
R54	QRD143J-224S	"	220 k Ω "	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R71	QRD143J-102S	C. Resistor	1 k Ω 1/4 W	1
R81	QRD147J-100S	"	10 Ω "	1
R82	" -183S	"	18 k Ω "	1
R83	" -102S	"	1 k Ω "	1
R85, 86	" -272S	"	2.7 k Ω "	2
R87, 88	" -472S	"	4.7 k Ω "	2
R89, 90	" -271S	"	270 Ω "	2
R91, 92	" -684S	"	680 k Ω "	2
R93, 94	" -822S	"	8.2 k Ω "	2
R96	QRD143J-334S	"	330 k Ω "	1
C1, 12	QCT05CH-220	C. Capacitor	22 pF 50 V	2
C2, 16, 35, 62	QCF11EZ-103	"	0.01 μ F 25 V	4
C3	QCT05CH-3R0	"	3 pF 50 V	1
C4, 13	" -7R0	"	7 pF "	2
C5	" -100	"	10 pF "	1
C6, 27	QCS11HJ-331	"	330 pF "	2
C7, 8, 33, 45, 56, 61, 67	QCF11EZ-223	"	0.022 μ F 25 V	7
C14, 21	QCS11HJ-150	"	15 pF 50 V	2
C15	QCT05CH-120	"	12 pF "	1
C20, 32	QCS11HJ-3R0	"	3 pF "	2
C22, 30	" -390	"	39 pF "	2
C23	" -100	"	10 pF "	1
C24, 25	" -8R0	"	8 pF "	2
C26	" -270	"	27 pF "	1
C28	QFS21HJ-392	"	0.0039 μ F "	1
C29	QCT05WK-120	"	12 pF	1
C31	QFS21HJ-181	P. Capacitor	180 pF 50 V	1
C34, 55	QET41AR-227	E. Capacitor	220 μ F 10 V	2
C36, 42, 43	QCF11EZ-473	C. Capacitor	0.047 μ F 25 V	3
C41	QCY41HK-472	"	0.0047 μ F 50 V	1
C44, 69, 93, 94	QET41HR-475	E. Capacitor	4.7 μ F "	4
C46	QET41AR-107	"	100 μ F 10 V	1
C51	QET41CR-106	"	10 μ F 16 V	1
C52, 53, 54	QFM41HM-223	"	0.022 μ F 50 V	3
C57	QCC11EM-223	"	0.022 μ F 25 V	1
C63	QET41CR-226	"	22 μ F 16 V	1
C64, 65	QCC11EM-103	"	0.01 μ F 25 V	2
C66	QET41AR-476	"	47 μ F 10 V	1
C70, 72, 73	QCS11HJ-151	C. Capacitor	150 pF 50 V	3
C71	QET41HR-105	E. Capacitor	1 μ F "	1
C81, 88, 89, 91, 92	" -335	"	3.3 μ F "	5
C82	QFS21HJ-471	P. Capacitor	470 pF "	1
C83, 84, 86	QEC41HM-474	E. Capacitor	0.47 μ F "	3
C85	QFM41HM-473	M. Capacitor	0.047 μ F "	1
C87, 90	" -153	"	0.015 μ F "	2
C95	QCS11HJ-5R0	C. Capacitor	5 pF "	1

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